

PORTLAND HARBOR RI/FS
REMEDIAL INVESTIGATION REPORT

APPENDIX D4.2
**CONTAMINANTS IN TRANSITION ZONE WATER AND
SEEPS—MAPS**

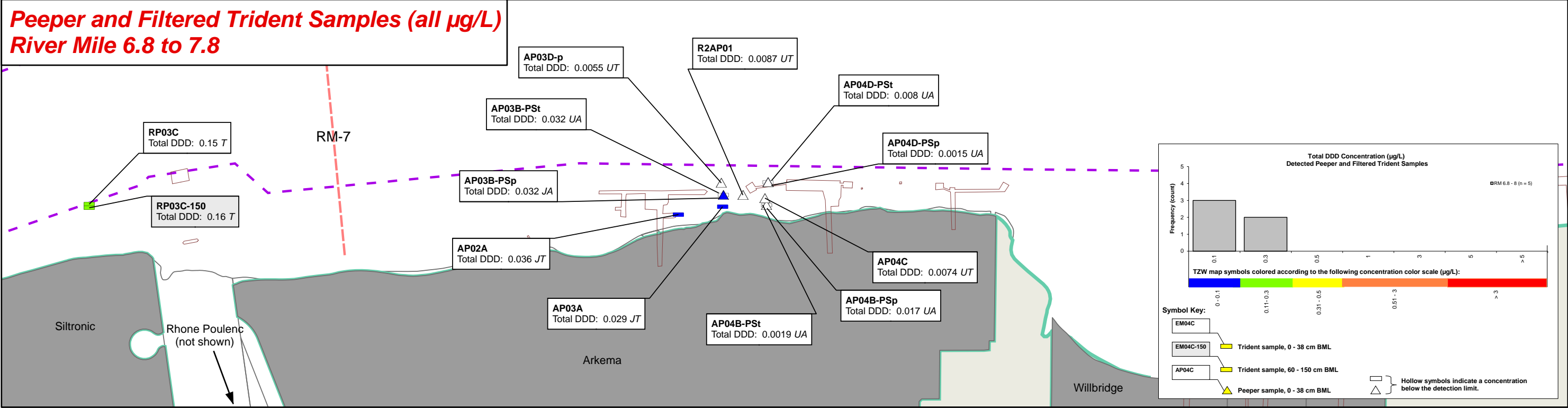
DRAFT FINAL

June 12, 2015

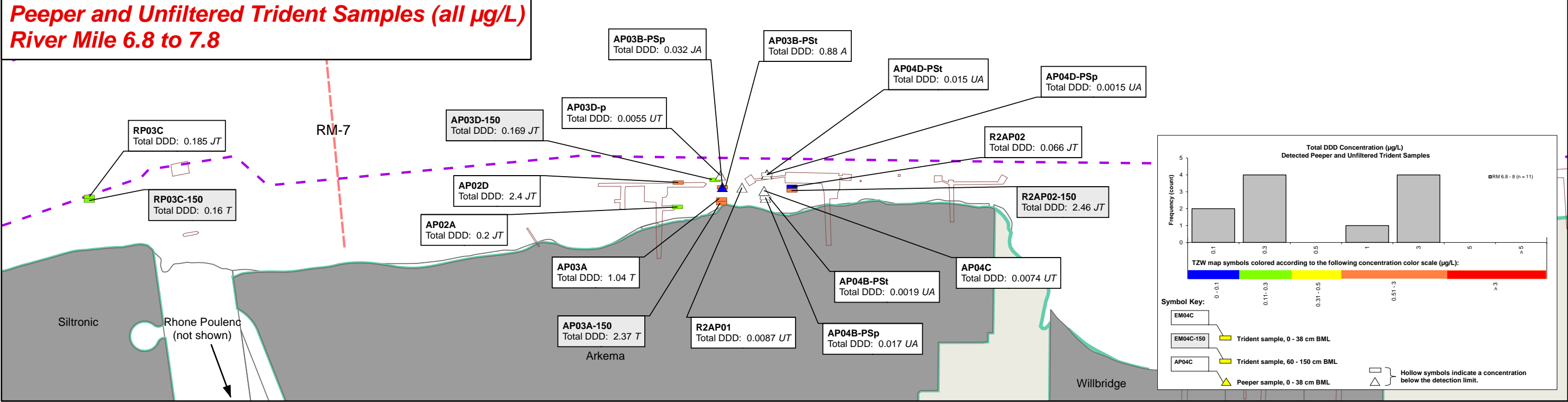
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**Peeper and Filtered Trident Samples (all $\mu\text{g/L}$)
River Mile 6.8 to 7.8**



**Peeper and Unfiltered Trident Samples (all $\mu\text{g/L}$)
River Mile 6.8 to 7.8**



FEATURE SOURCES:
Property and Taxlot Boundaries: Metro RLIS
Channel & River miles: US Army Corps of Engineers.
Docks & In-water Structures: digitized from October
2001 0.33 ft. resolution color orthophotos



PSp Indicates sample collected during the GWPA Pilot Study by small-volume peeper.
PSt Indicates sample collected during the GWPA Pilot Study by Trident sampler.

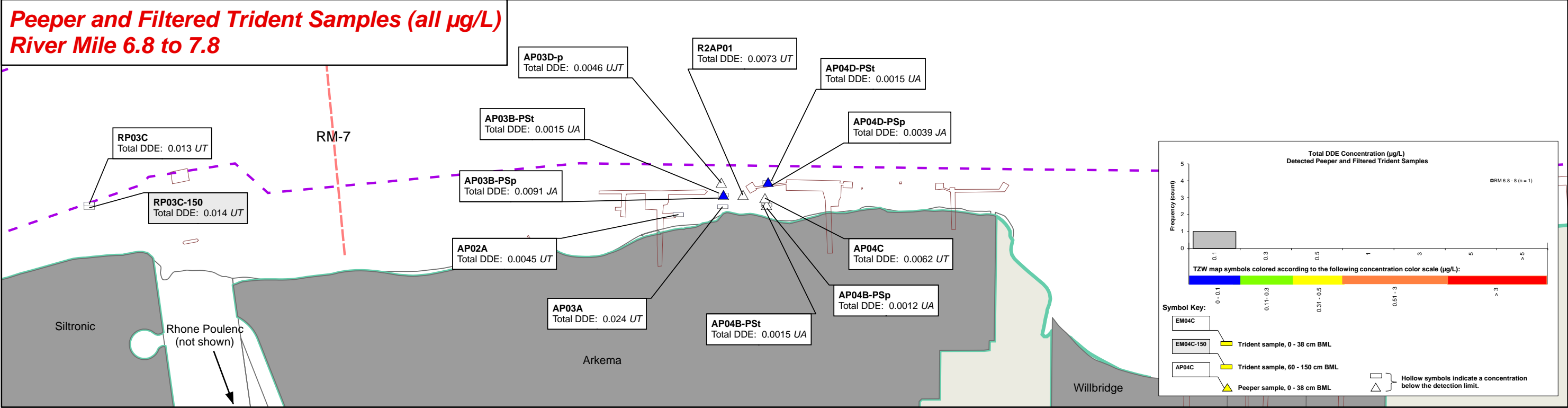
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T Mathematically derived value.
J The associated numerical value was approximated by the analytical laboratory.
U The analyte was not detected above the reported sample quantitation limit.
UJ The analyte was not detected above the reported sample quantitation limit; however,
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A Total value based on a limited number of analytes.

Map Features

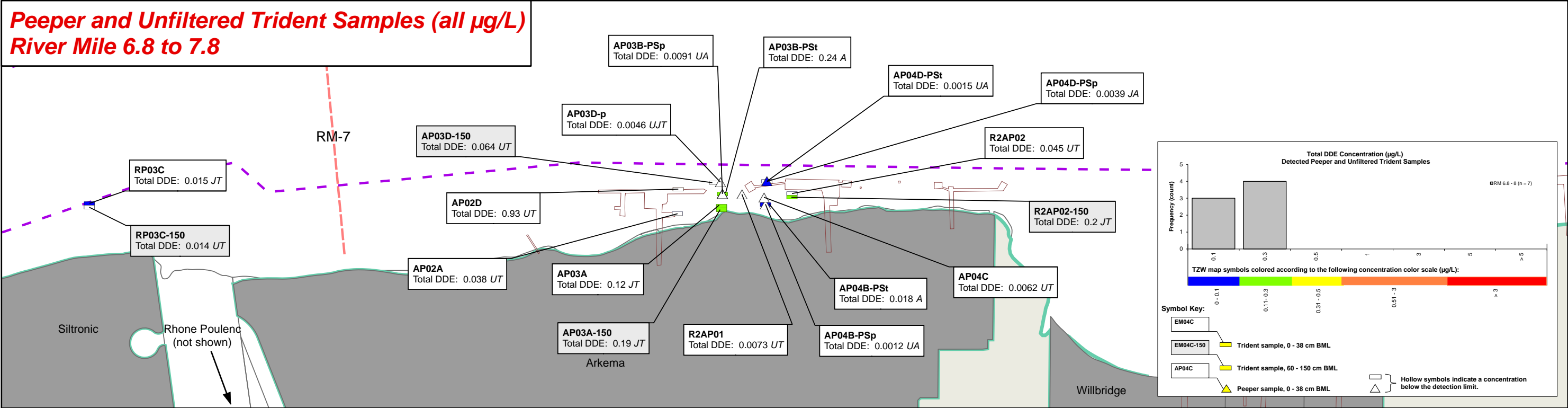
- Docks and Structures
- Navigation Channel
- River Miles
- GWPA Study Site
- Upland ECSI Sites (2008)
- Waterfront Taxlots

0 250 500 750 1,000 Feet

**Peeper and Filtered Trident Samples (all $\mu\text{g/L}$)
River Mile 6.8 to 7.8**



**Peeper and Unfiltered Trident Samples (all $\mu\text{g/L}$)
River Mile 6.8 to 7.8**



Map Features

- Docks and Structures
- Navigation Channel
- River Miles
- GWPA Study Site
- Upland ECSI Sites (2008)
- Waterfront Taxlots

0 250 500 750 1,000 Feet

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Channel & River miles: US Army Corps of Engineers.
Docks & In-water Structures: digitized from October
2001 0.33 ft. resolution color orthophotos



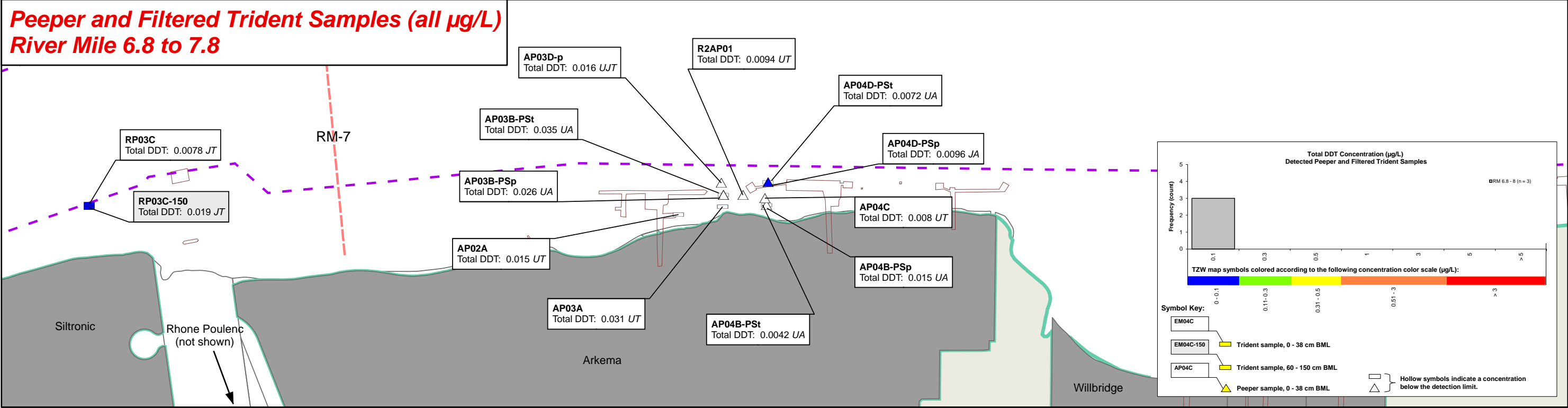
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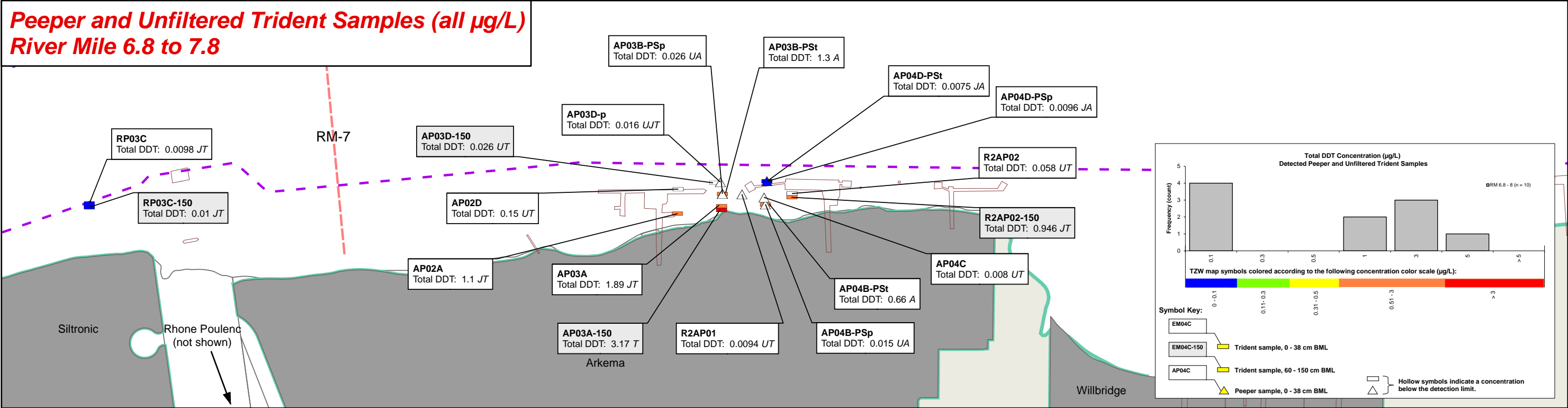
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Map D4.2-1b
Portland Harbor RI/FS
Remedial Investigation Report
Transition Zone Water Chemistry
Total DDE ($\mu\text{g/L}$)
River Mile 6.8 to 7.8

**Peeper and Filtered Trident Samples (all µg/L)
River Mile 6.8 to 7.8**



**Peeper and Unfiltered Trident Samples (all µg/L)
River Mile 6.8 to 7.8**



Map Features

- Docks and Structures
- Navigation Channel
- River Miles
- GWPA Study Site
- Upland ECSI Sites (2008)
- Waterfront Taxlots

0 250 500 750 1,000 Feet

FEATURE SOURCES:
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Channel & River miles: US Army Corps of Engineers.
Docks & In-water Structures: digitized from October
2001 0.33 ft. resolution color orthophotos



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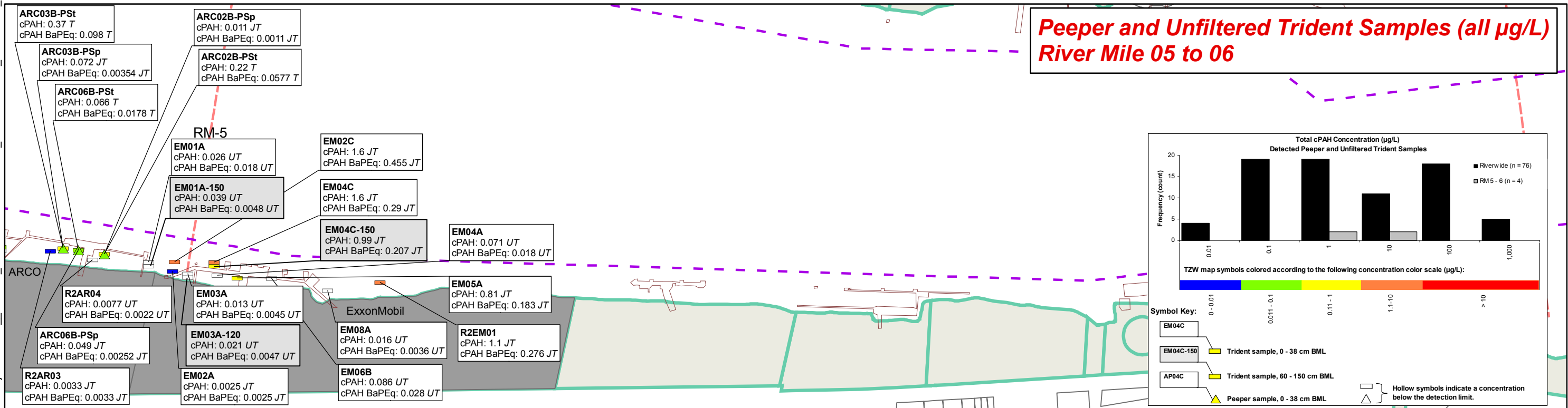
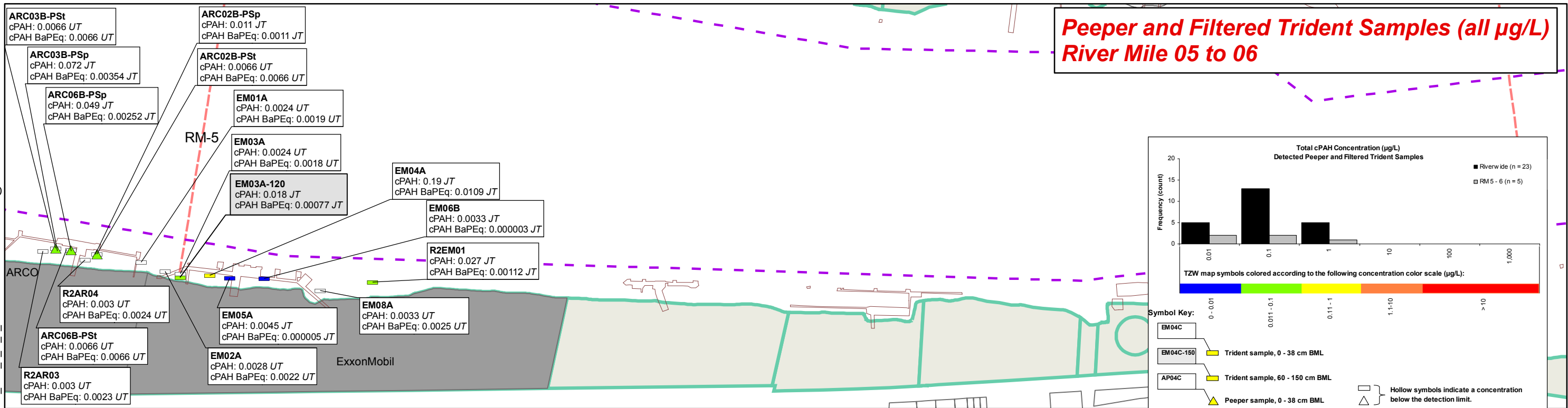
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-  Docks and Structures
-  Navigation Channel
-  River Miles
-  GWPA Study Site
-  Upland ECSI Sites (2008)
-  Waterfront Taxlots



Map D4.2-2a
Portland Harbor RI/FS
Remedial Investigation Report
Transition Zone Water Chemistry
Total cPAHs (µg/L)
River Mile 04 to 05

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FEATURE SOURCES:
Property and Taxlot Boundaries: Metro RLIS
Channel & River miles: US Army Corps of Engineers.
Docks & In-water Structures: digitized from October 2001 0.33 ft. resolution color orthophotos



Map Features

- Docks and Structures
- Navigation Channel
- River Miles
- GWPA Study Site
- Upland ECSI Sites (2008)
- Waterfront Taxlots

0 250 500 750 1,000 Feet

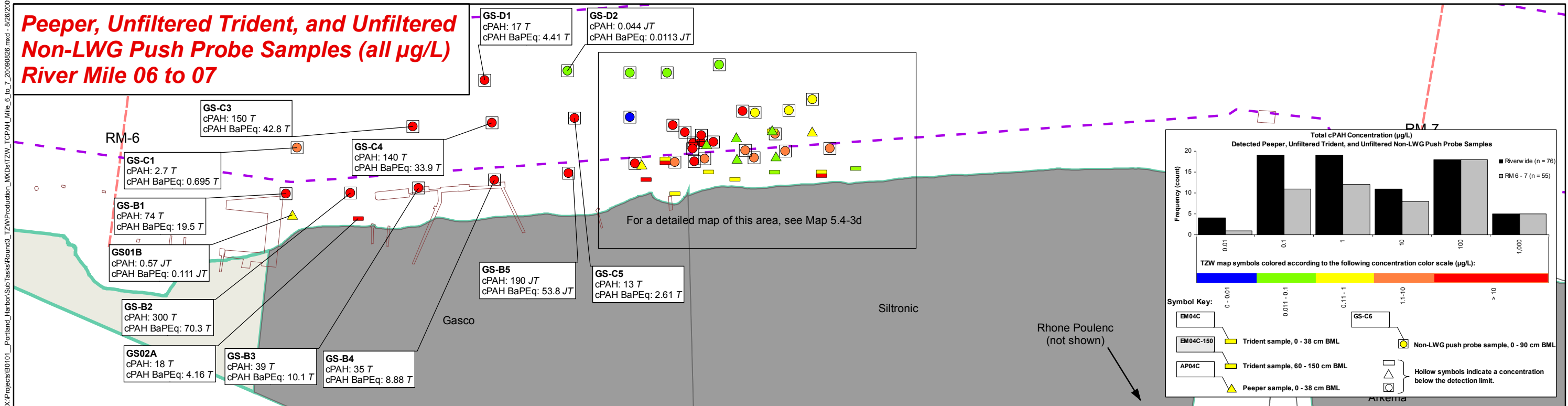
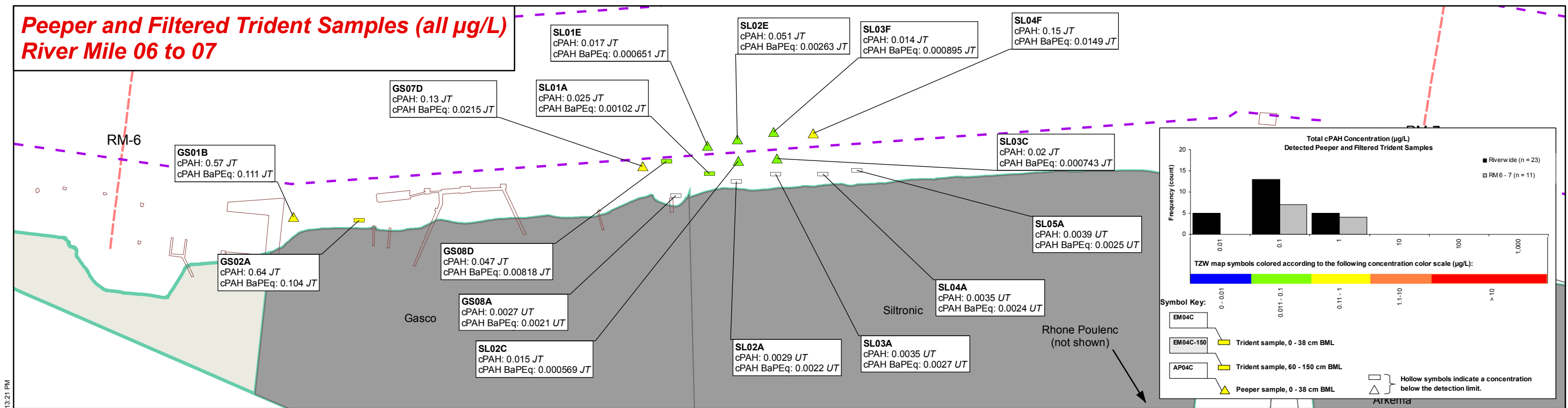
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Map D4.2-2b
Portland Harbor RI/FS
Remedial Investigation Report
Transition Zone Water Chemistry
Total cPAHs ($\mu\text{g/L}$)
River Mile 05 to 06

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Map Features

- Docks and Structures
- Navigation Channel
- River Miles
- GWPA Study Site
- Upland ECSI Sites (2008)
- Waterfront Taxlots

0 250 500 750 1,000 Feet

FEATURE SOURCES:
Property and Taxlot Boundaries: Metro RLIS
Channel & River miles: US Army Corps of Engineers.
Docks & In-water Structures: digitized from October 2001 0.33 ft. resolution color orthophotos

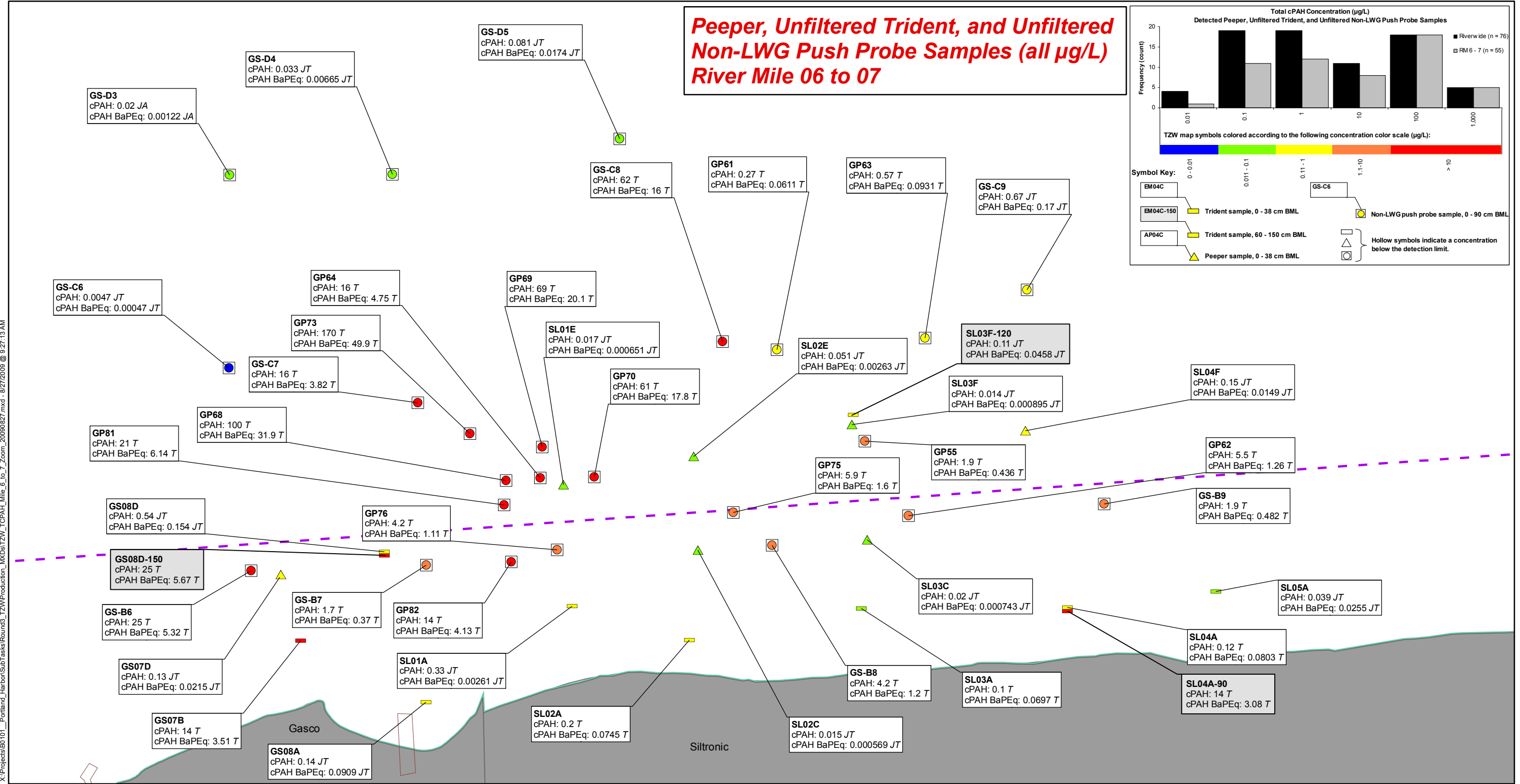


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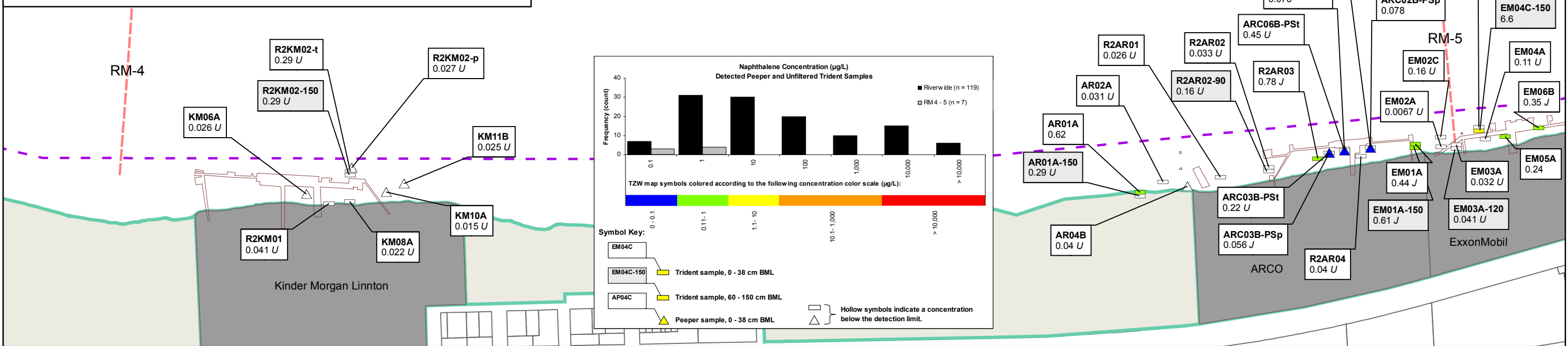
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Map D4.2-2c
Portland Harbor RI/FS
Remedial Investigation Report
Transition Zone Water Chemistry
Total cPAHs ($\mu\text{g/L}$)
River Mile 06 to 07

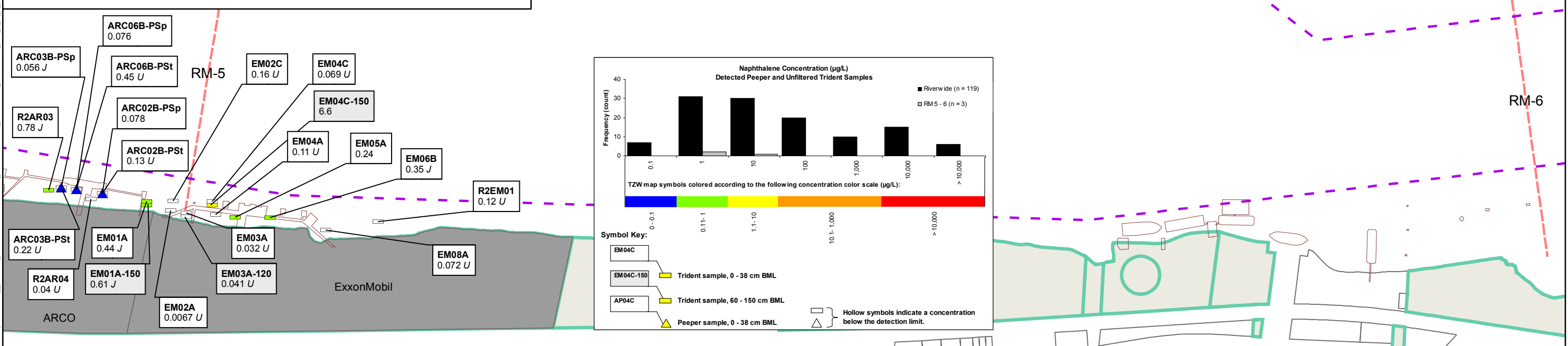
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**Peeper and Unfiltered Trident Samples (all µg/L)
River Mile 04 to 05**



**Peeper and Unfiltered Trident Samples (all µg/L)
River Mile 05 to 06**

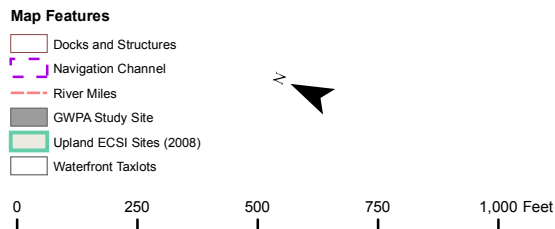


FEATURE SOURCES:
Property and Taxlot Boundaries: Metro RLIS
Channel & River miles: US Army Corps of Engineers.
Docks & In-water Structures: digitized from October 2001 0.33 ft. resolution color orthophotos



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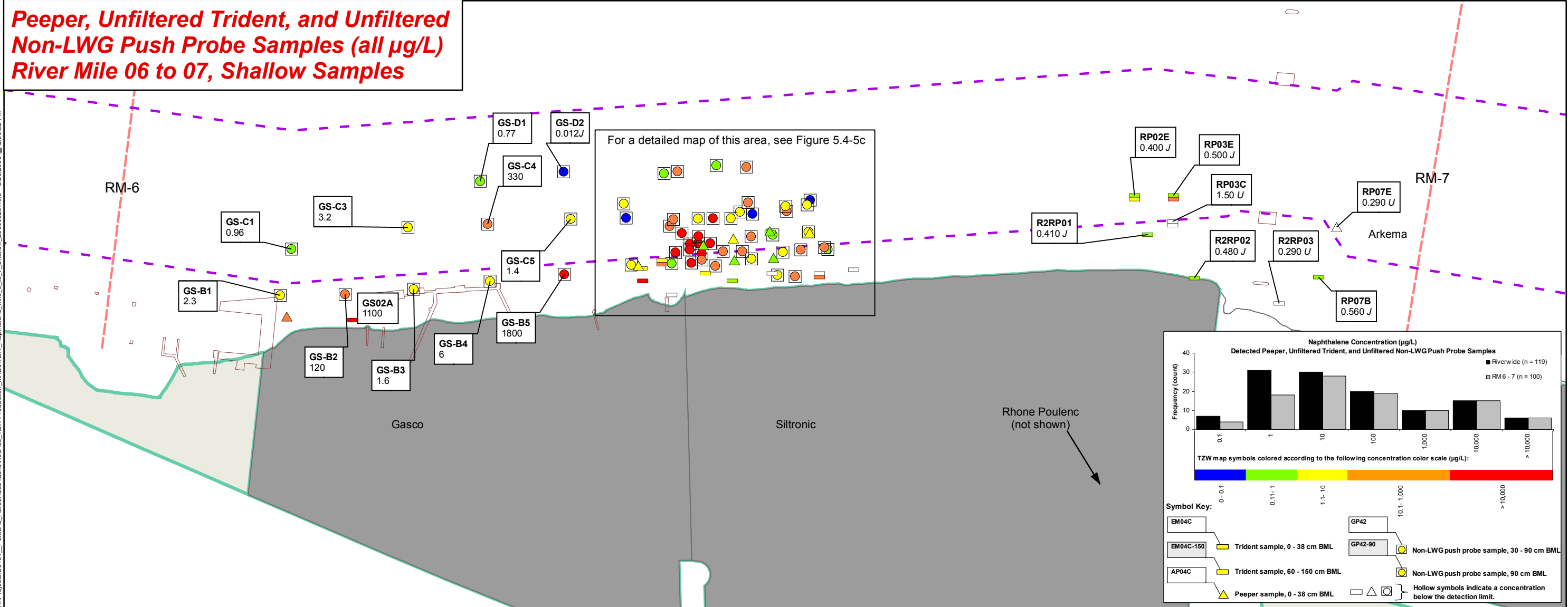
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Map D4.2-3a
Portland Harbor RI/FS
Remedial Investigation Report
Transition Zone Water Chemistry
Naphthalene (µg/L)
River Miles 04 to 06

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**Peeper, Unfiltered Trident, and Unfiltered Non-LWG Push Probe Samples (all $\mu\text{g/L}$)
River Mile 06 to 07, Shallow Samples**



FEATURE SOURCES:
Property and Taxlot Boundaries: Metro RLIS
Channel & River miles: US Army Corps of Engineers.
Docks & In-water Structures: digitized from October 2001 0.33 ft. resolution color orthophotos



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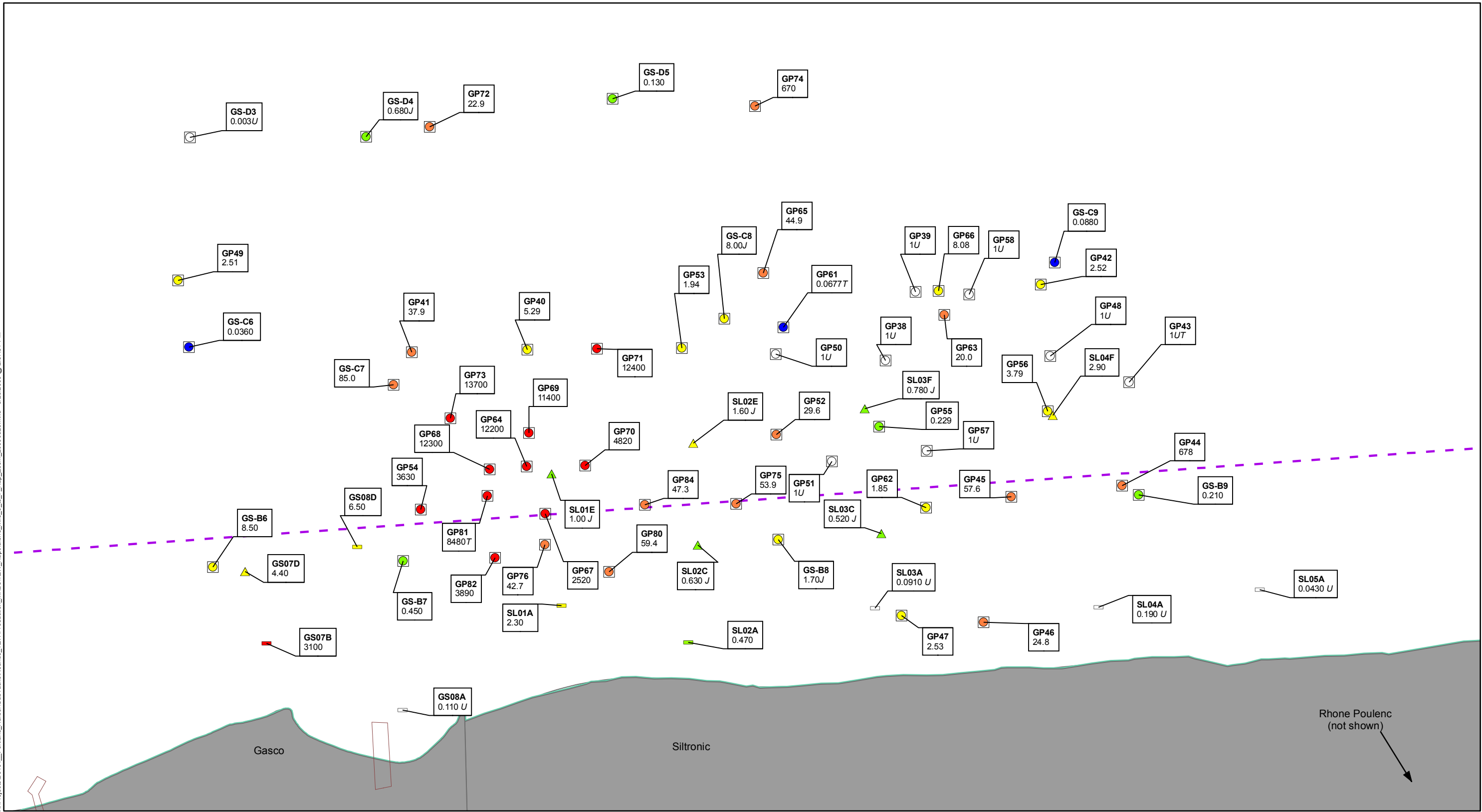
Map Features

- Docks and Structures
- Navigation Channel
- River Miles
- GWPA Study Site
- Upland ECSI Sites (2008)
- Waterfront Taxlots

0 250 500 750 1,000 Feet

Map D4.2-3b
Portland Harbor RI/FS
Remedial Investigation Report
Transition Zone Water Chemistry
Naphthalene ($\mu\text{g/L}$)
River Mile 06 to 07, Shallow Samples

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- Map Features
- Docks and Structures
 - Navigation Channel
 - River Miles
 - GWPA Study Site
 - Upland Sites (2008)
 - Waterfront Taxlots

0 60 120 180 240 Feet

FEATURE SOURCES:
Property and Taxlot Boundaries: Metro RLIS
Channel & River miles: US Army Corps of Engineers.
Docks & In-water Structures: digitized from October
2001 0.33 ft. resolution color orthophotos

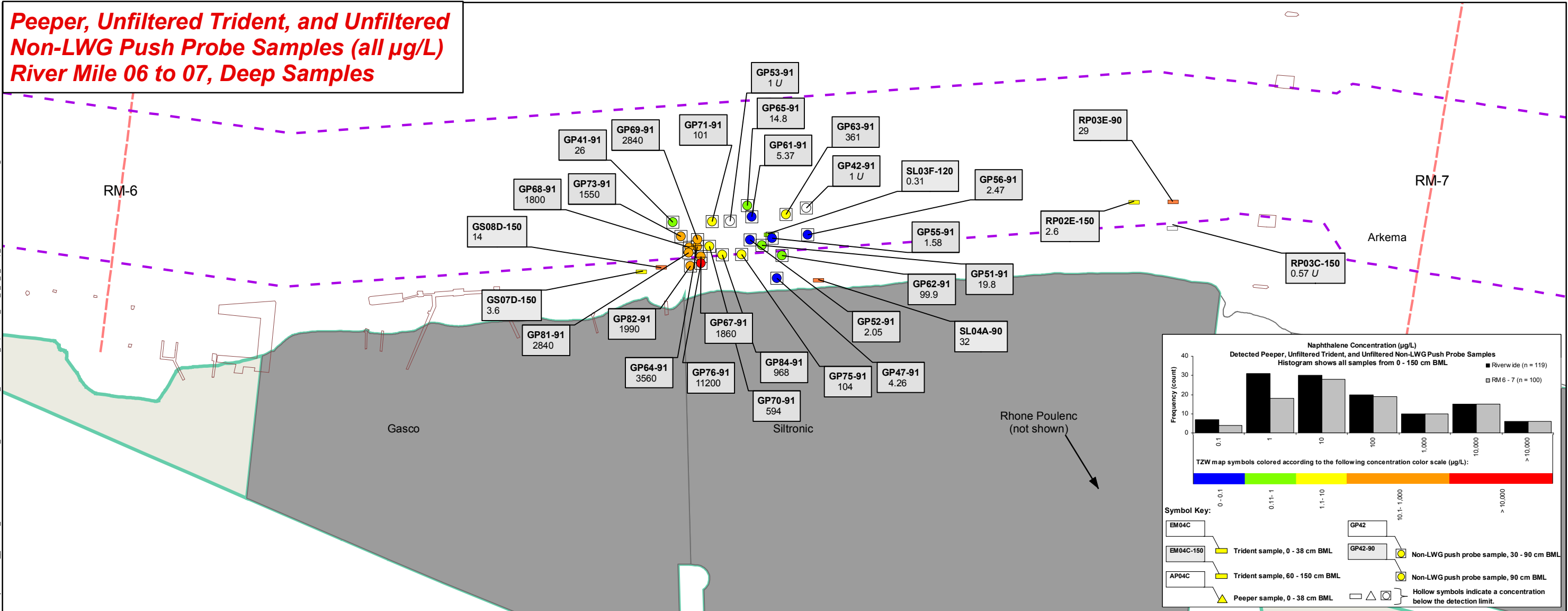


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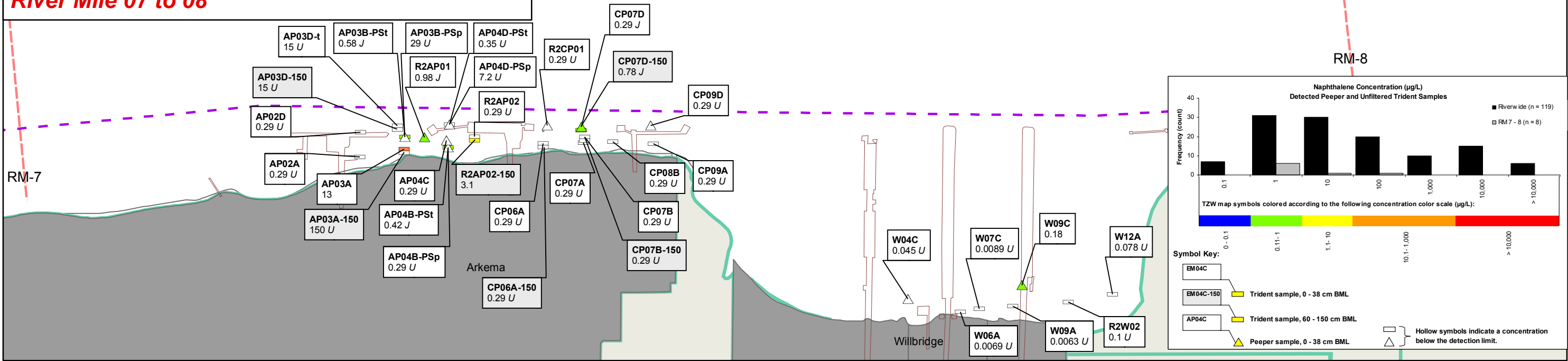
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Map D4.2-3c
Portland Harbor RI/FS
Remedial Investigation Report
Transition Zone Water Chemistry
Naphthalene (µg/L)
River Mile 06 to 07, Shallow Zoom

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Peeper and Unfiltered Trident Samples (all µg/L)
River Mile 07 to 08



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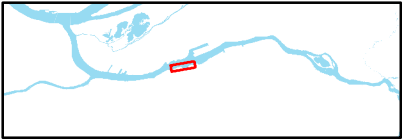
Map Features

- Docks and Structures
- Navigation Channel
- River Miles
- GWPA Study Site
- Upland ECSI Sites (2008)
- Waterfront Taxlots



0 250 500 750 1,000 Feet

FEATURE SOURCES:
Property and Taxlot Boundaries: Metro RLIS
Channel & River miles: US Army Corps of Engineers.
Docks & In-water Structures: digitized from October 2001 0.33 ft. resolution color orthophotos



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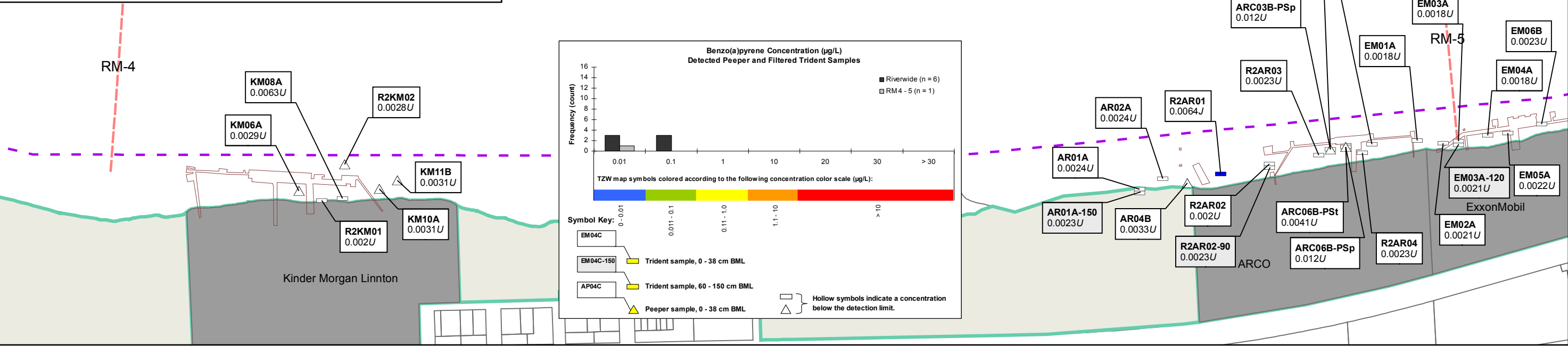
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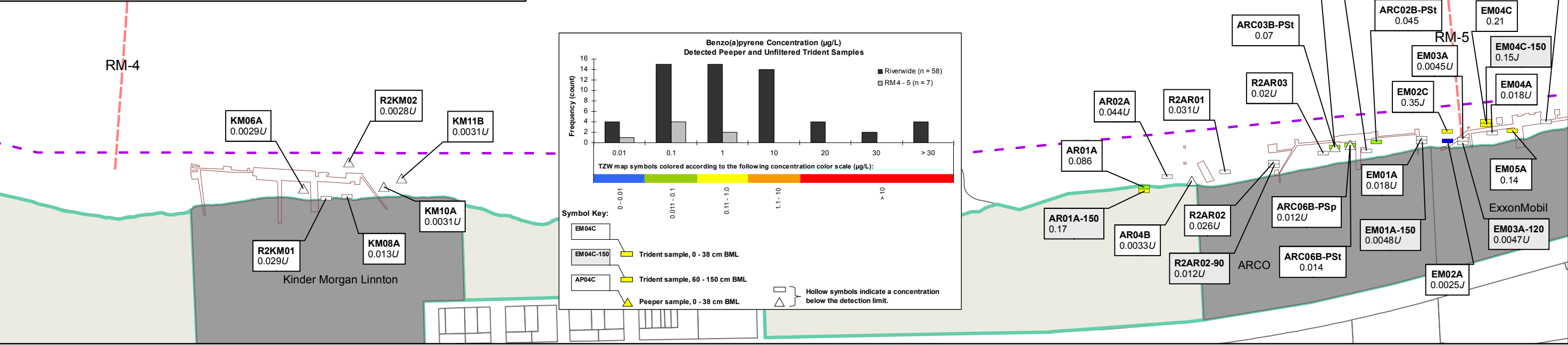
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Portland Harbor RI/FS
Remedial Investigation Report
Transition Zone Water Chemistry
Naphthalene (µg/L)
River Mile 07 to 08

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**Peeper and Filtered Trident Samples (all $\mu\text{g/L}$)
River Mile 04 to 05**



**Peeper and Unfiltered Trident Samples (all $\mu\text{g/L}$)
River Mile 04 to 05**



Map Features

- Docks and Structures
- Navigation Channel
- River Miles
- GWPA Study Site
- Upland ECSI Sites (2008)
- Waterfront Taxlots

0 250 500 750 1,000 Feet

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Docks & In-water Structures: digitized from October 2001 0.33 ft. resolution color orthophotos



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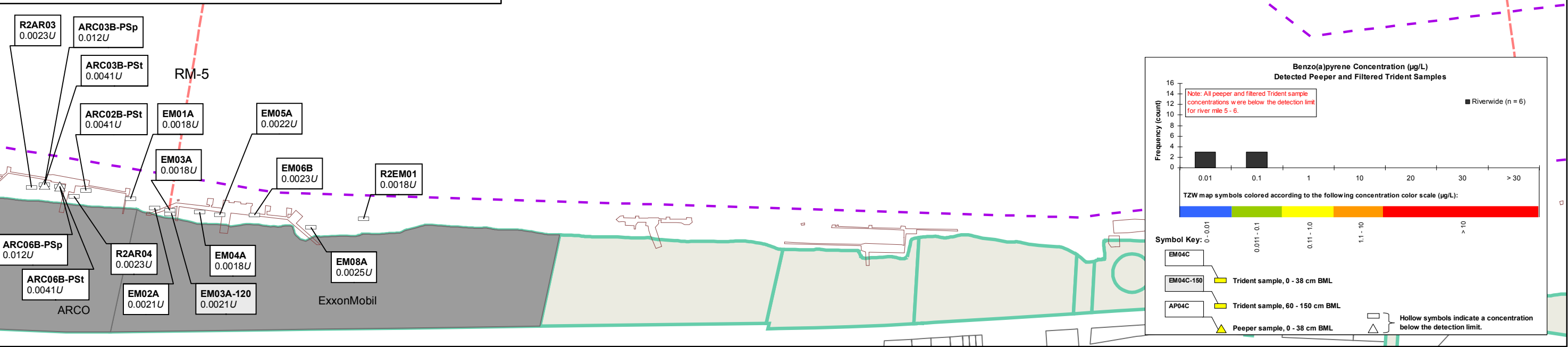
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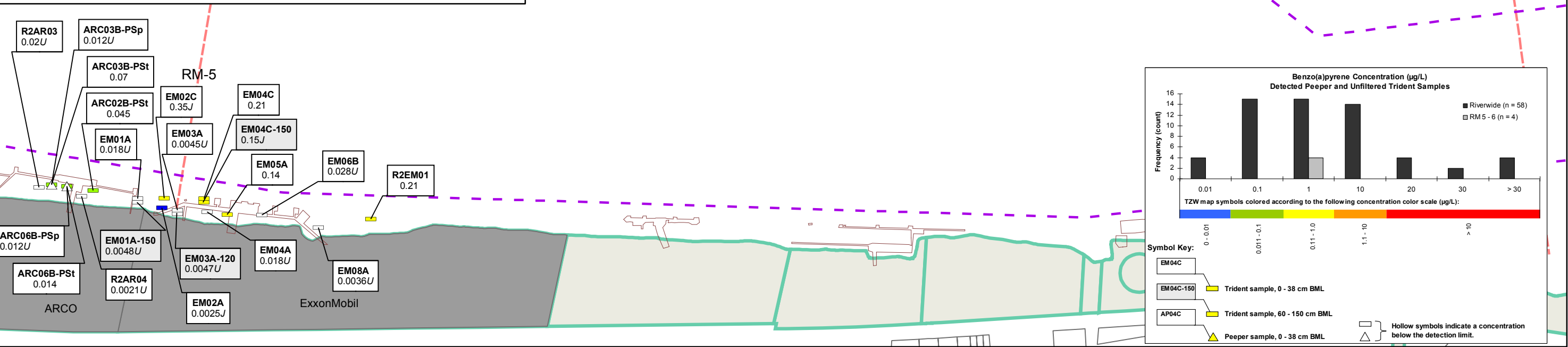
Map D4.2-4a
Portland Harbor RI/FS
Remedial Investigation Report
Transition Zone Water Chemistry
Benzo(a)pyrene ($\mu\text{g/L}$)
River Mile 04 to 05

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Peeper and Filtered Trident Samples (all µg/L)
River Mile 05 to 06



Peeper and Unfiltered Trident Samples (all µg/L)
River Mile 05 to 06



FEATURE SOURCES:
Property and Taxlot Boundaries: Metro RLIS
Channel & River miles: US Army Corps of Engineers.
Docks & In-water Structures: digitized from October 2001 0.33 ft. resolution color orthophotos



Map Features

- Docks and Structures
- Navigation Channel
- River Miles
- GWPA Study Site
- Upland ECSI Sites (2008)
- Waterfront Taxlots



0 250 500 750 1,000 Feet

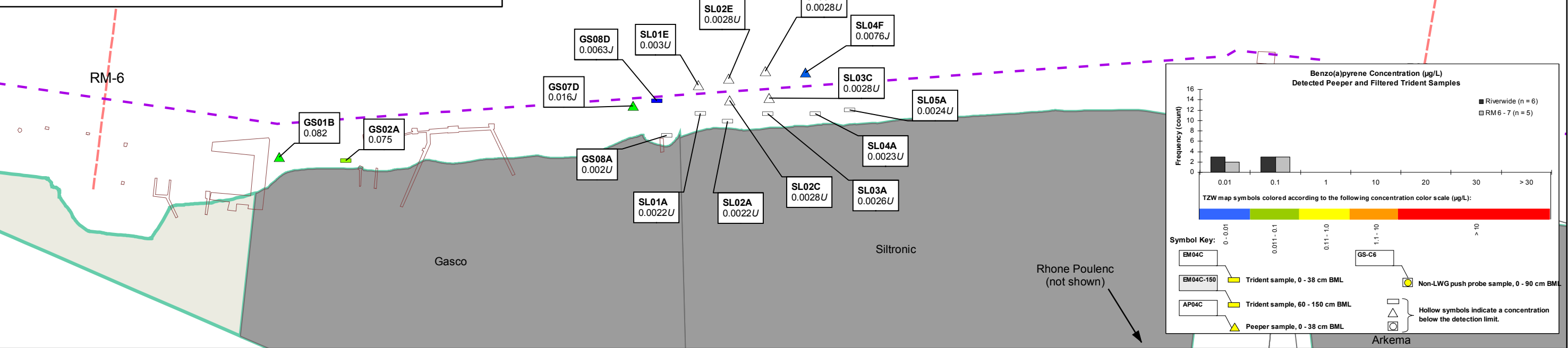
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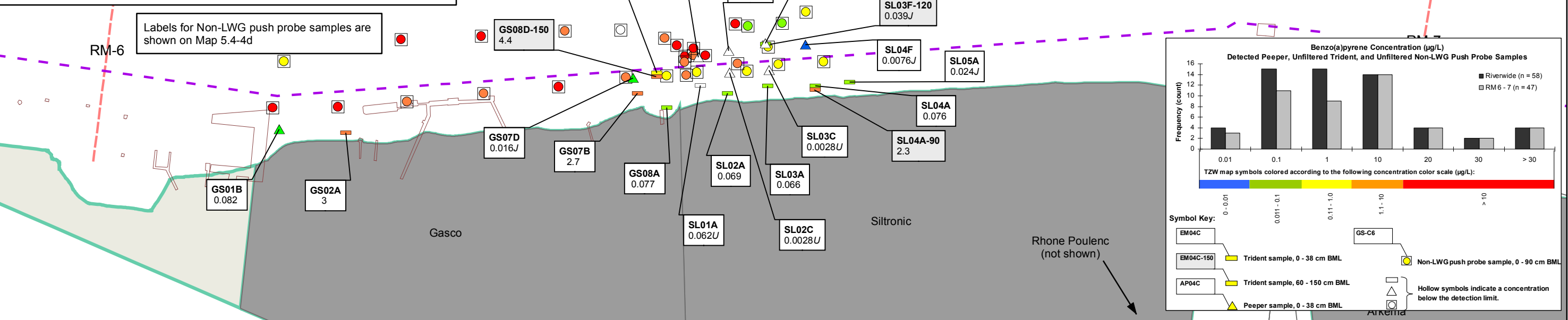
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**Peeper and Filtered Trident Samples (all $\mu\text{g/L}$)
River Mile 06 to 07**



**Peeper, Unfiltered Trident, and Unfiltered Non-LWG Push Probe Samples (all $\mu\text{g/L}$)
River Mile 06 to 07**

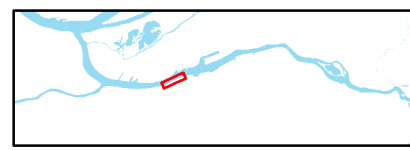


Map Features

- Docks and Structures
- Navigation Channel
- River Miles
- GWPA Study Site
- Upland ECSI Sites (2008)
- Waterfront Taxlots

0 250 500 750 1,000 Feet

FEATURE SOURCES:
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Docks & In-water Structures: digitized from October 2001 0.33 ft. resolution color orthophotos



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Map D4.2-4c
Portland Harbor RI/FS
Remedial Investigation Report
Transition Zone Water Chemistry
Benzo(a)pyrene ($\mu\text{g/L}$)
River Mile 06 to 07

RM-6

RM-7



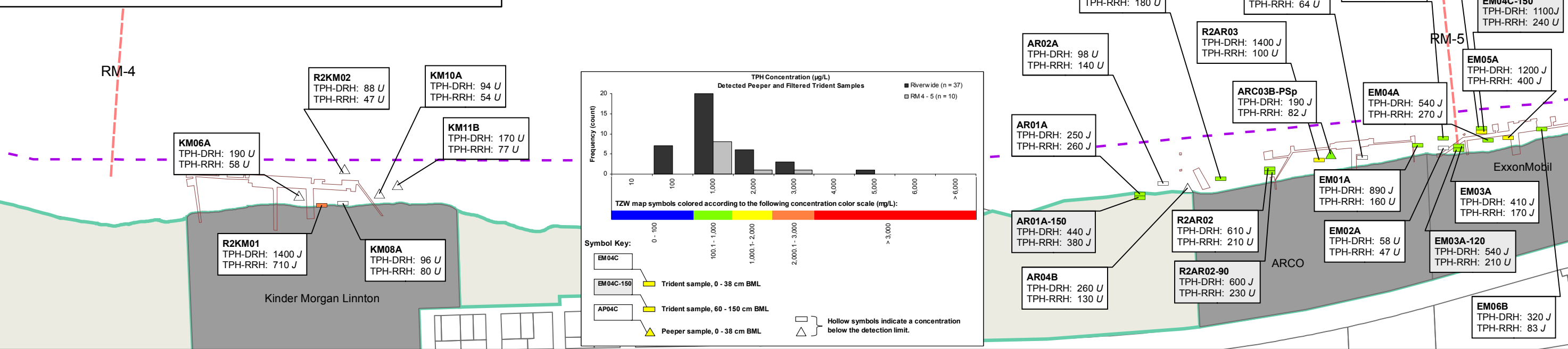
- 0 250 500 750 1,000 Feet

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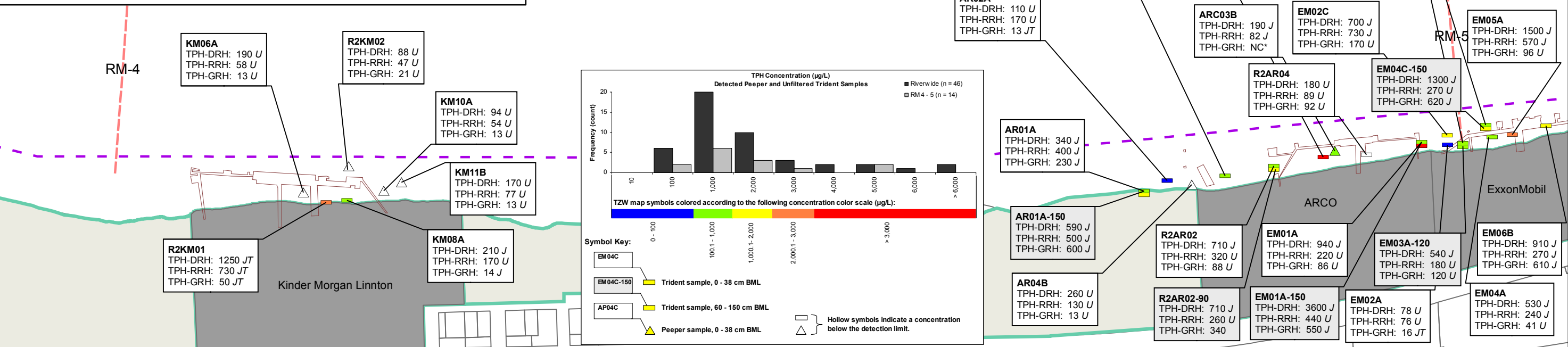
Map D4.2-4d
Portland Harbor RI/FS
Remedial Investigation Report
Transition Zone Water Chemistry
Benzo(a)pyrene (µg/L)
River Mile 06 to 07, zoom

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**Peeper and Filtered Trident Samples (all µg/L)
River Mile 04 to 05**



**Peeper and Unfiltered Trident Samples (all µg/L)
River Mile 04 to 05**



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Channel & River miles: US Army Corps of Engineers.
Docks & In-water Structures: digitized from October 2001 0.33 ft. resolution color orthophotos



PS Indicates sample collected during the GWPA Pilot Study by Trident sampler.
PSp Indicates sample collected during the GWPA Pilot Study by small-volume peeper.

Qualifiers:
T Mathematically derived value.
J The associated numerical value was approximated by the analytical laboratory.
U The analyte was not detected above the reported sample quantitation limit.
UJ The analyte was not detected above the reported sample quantitation limit; however, the reported quantitation limit was approximated by the analytical laboratory.
A Total value based on a limited number of analytes.

NC Not collected

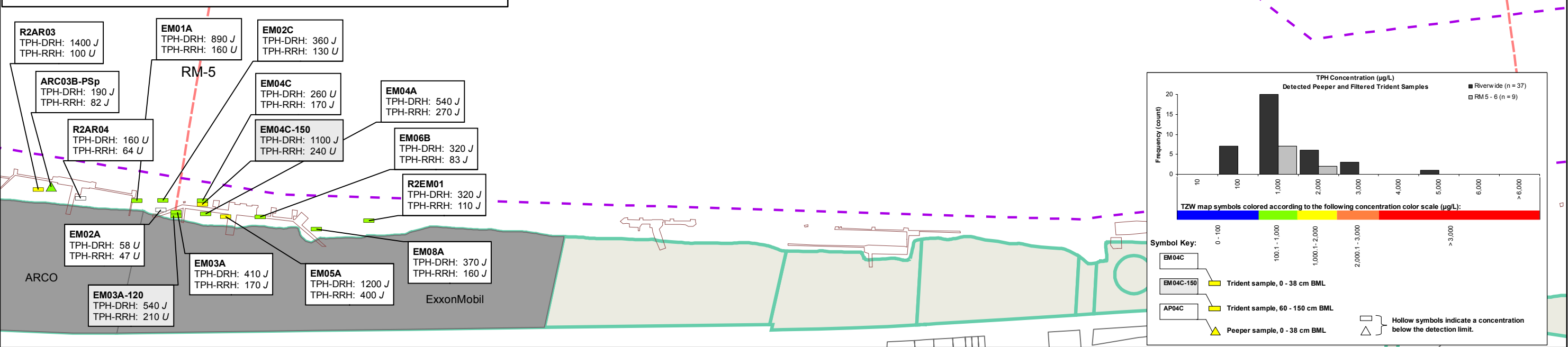
Map Features

- Docks and Structures
- Navigation Channel
- River Miles
- GWPA Study Site
- Upland ECSI Sites (2008)
- Waterfront Taxlots

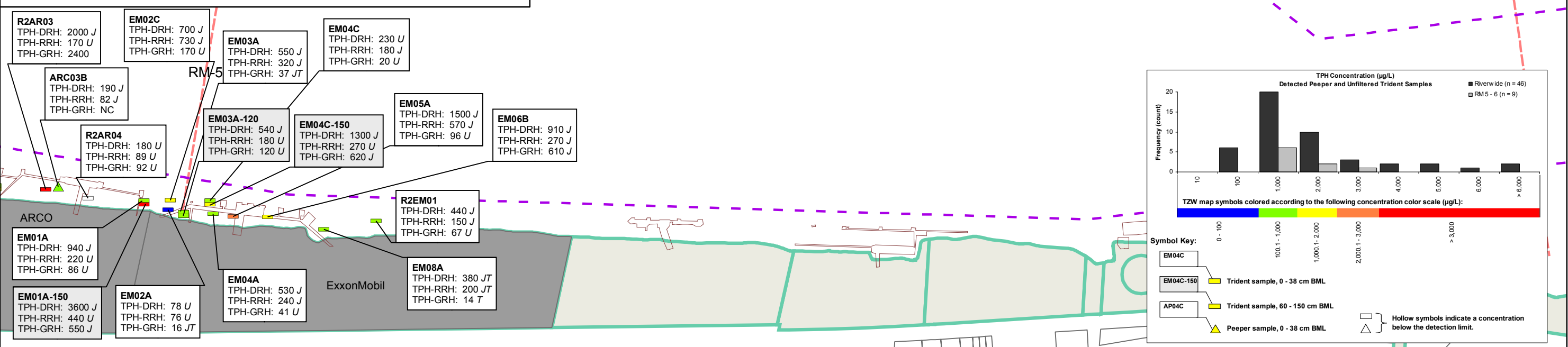
0 250 500 750 1,000 Feet

X:\Projects\B0101_Portland_Harbor\SubTasks\Round3_TZWP\Production_MXD\TZW_TPH_Mile_5_to_6_20090401.mxd - 4/1/2009 @ 4:49:53 PM

Peeper and Filtered Trident Samples (all µg/L) River Mile 05 to 06



Peeper and Unfiltered Trident Samples (all µg/L) River Mile 05 to 06



FEATURE SOURCES:
Property and Taxlot Boundaries: Metro RLIS
Channel & River miles: US Army Corps of Engineers.
Docks & In-water Structures: digitized from October 2001 0.33 ft. resolution color orthophotos



Map Features

- Docks and Structures
- Navigation Channel
- River Miles
- GWPA Study Site
- Upland ECSI Sites (2008)
- Waterfront Taxlots



0 250 500 750 1,000 Feet

PSI Indicates sample collected during the GWPA Pilot Study by Trident sampler.
PSp Indicates sample collected during the GWPA Pilot Study by small-volume peeper.

Qualifiers:

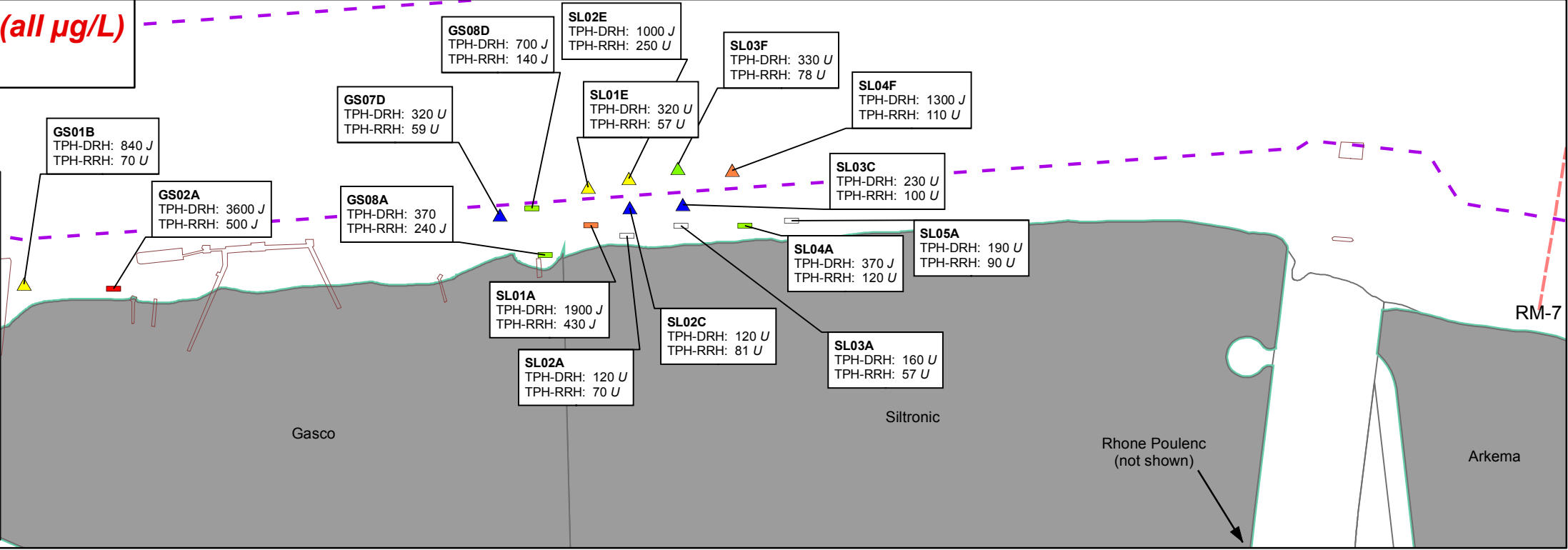
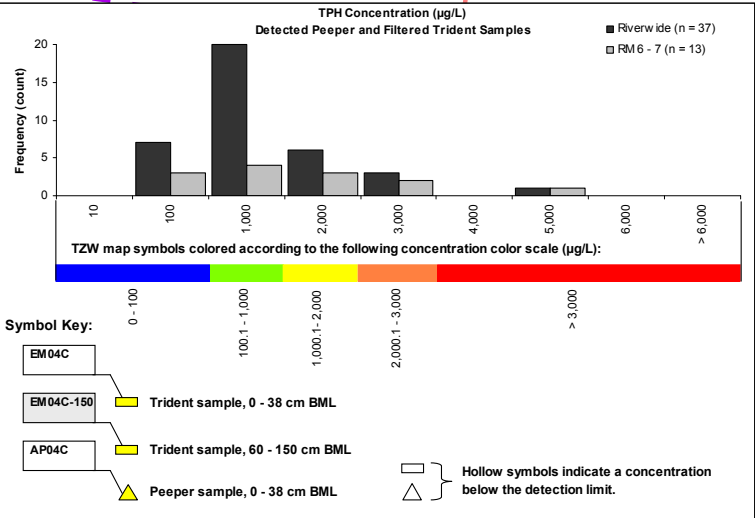
- T Mathematically derived value.
- J The associated numerical value was approximated by the analytical laboratory.
- U The analyte was not detected above the reported sample quantitation limit.
- UJ The analyte was not detected above the reported sample quantitation limit; however, the reported quantitation limit was approximated by the analytical laboratory.
- A Total value based on a limited number of analytes.

NC Not collected

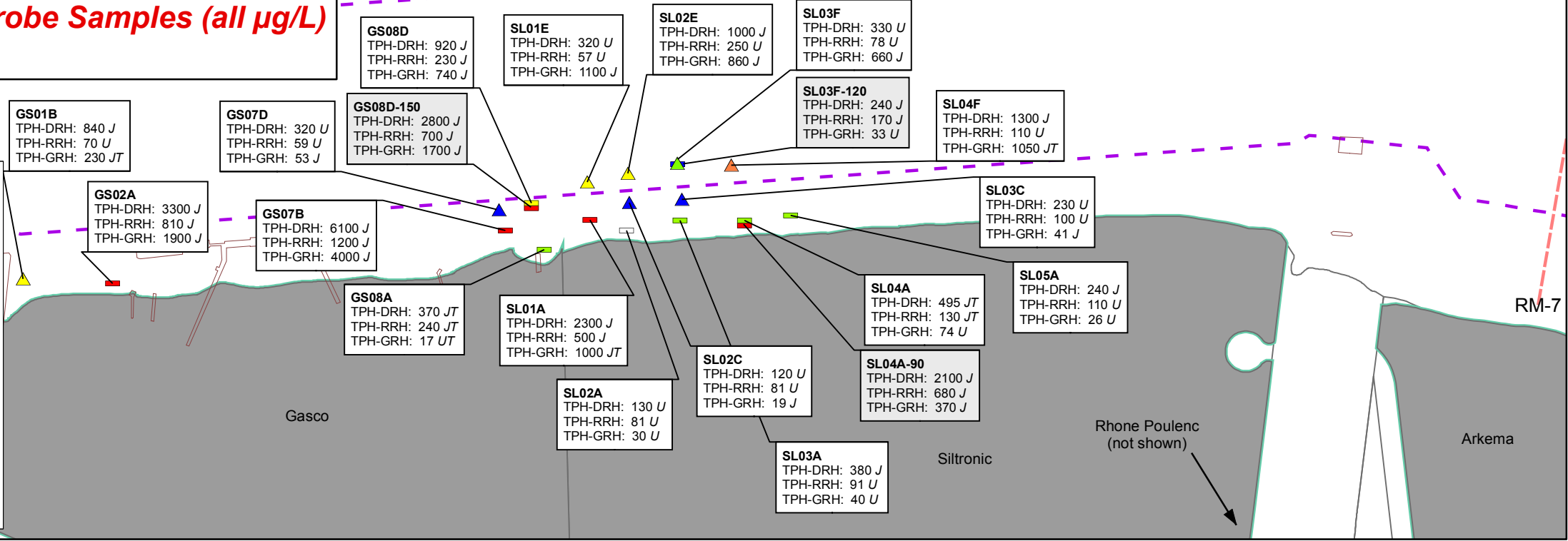
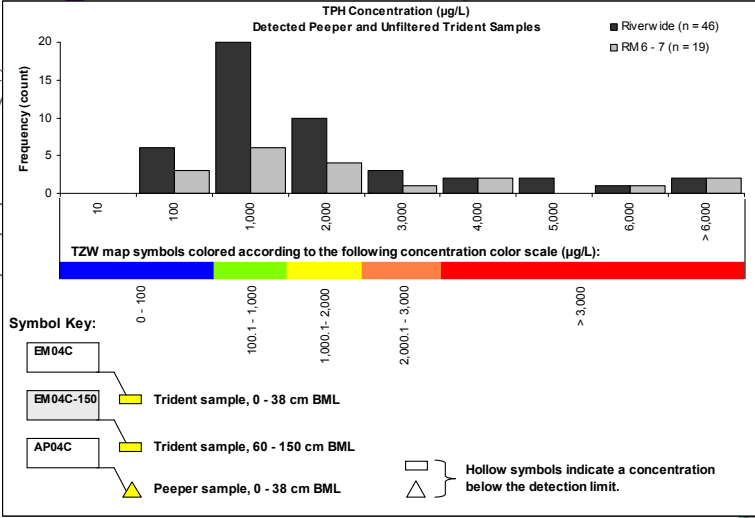
Map D4.2-5b
Portland Harbor RI/FS
Remedial Investigation Report
Transition Zone Water Chemistry
Total Petroleum Hydrocarbons (µg/L)
River Mile 05 to 06

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**Peeper and Filtered Trident Samples (all $\mu\text{g/L}$)
River Mile 06 to 07**



**Peeper, Unfiltered Trident, and GeoProbe Samples (all $\mu\text{g/L}$)
River Mile 06 to 07**



FEATURE SOURCES:
Property and Taxlot Boundaries: Metro RLIS
Channel & River miles: US Army Corps of Engineers.
Docks & In-water Structures: digitized from October
2001 0.33 ft. resolution color orthophotos



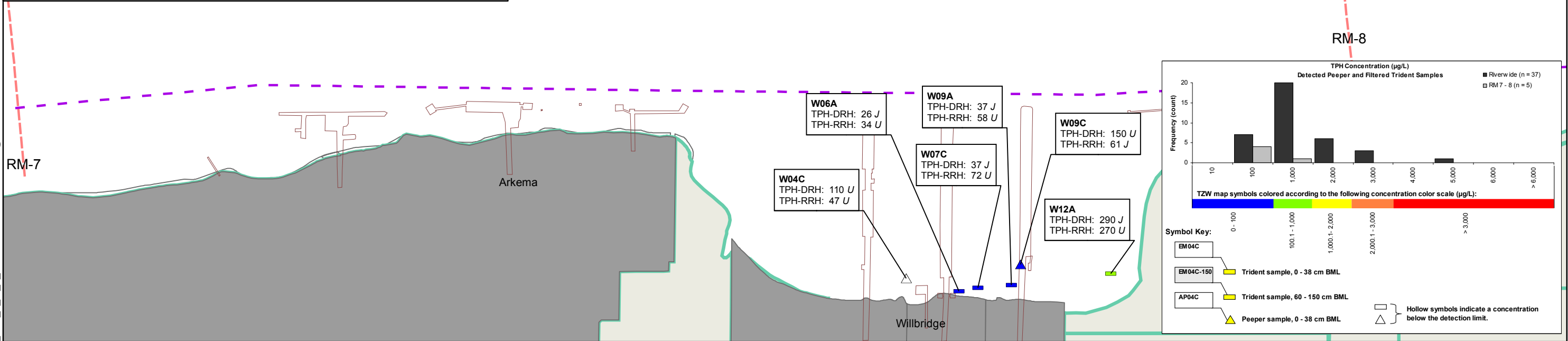
PS Indicates sample collected during the GWPA Pilot Study by Trident sampler.
PSp Indicates sample collected during the GWPA Pilot Study by small-volume peeper.

Qualifiers:
T Mathematically derived value.
J The associated numerical value was approximated by the analytical laboratory.
U The analyte was not detected above the reported sample quantitation limit.
UJ The analyte was not detected above the reported sample quantitation limit; however,
the reported quantitation limit was approximated by the analytical laboratory.
A Total value based on a limited number of analytes.

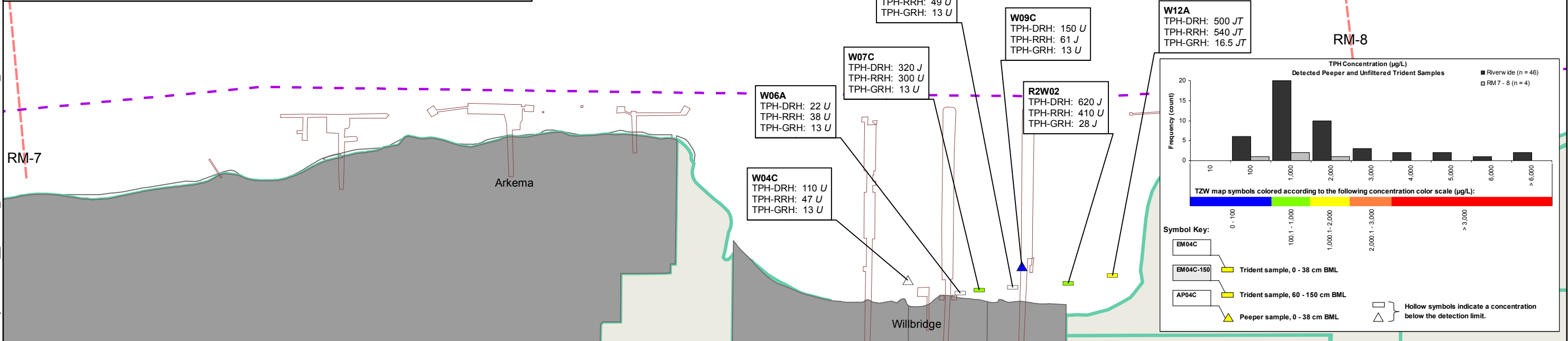
Map Features:

- Docks and Structures
- Navigation Channel
- River Miles
- GWPA Study Site
- Upland ECSI Sites (2008)
- Waterfront Taxlots

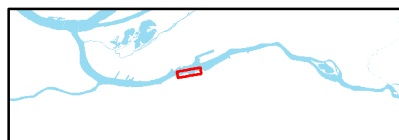
0 250 500 750 1,000 Feet



***Peeper and Unfiltered Trident Samples (all µg/L)
River Mile 07 to 08***



FEATURE SOURCES:
Property and Taxlot Boundaries: Metro RLIS
Channel & River miles: US Army Corps of Engineers.
Docks & In-water Structures: digitized from October
2001 0.33 ft. resolution color orthophotos

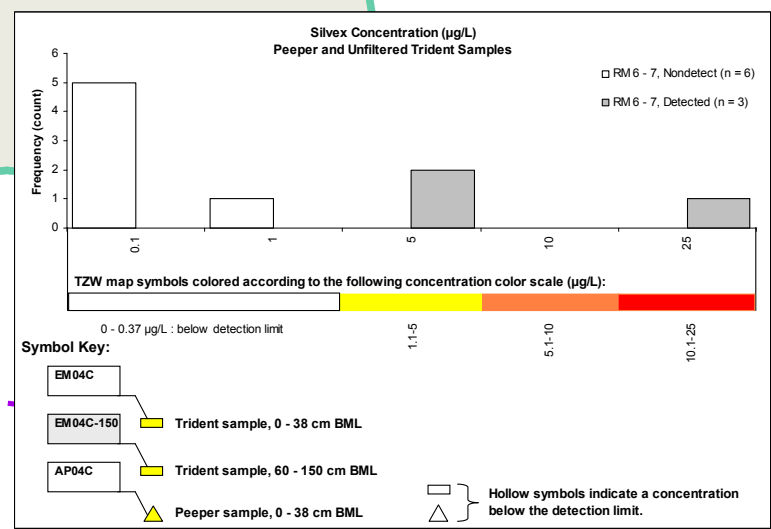


PSt Indicates sample collected during the GWPA Pilot Study by Trident sampler.
PSp Indicates sample collected during the GWPA Pilot Study by small-volume peeper.

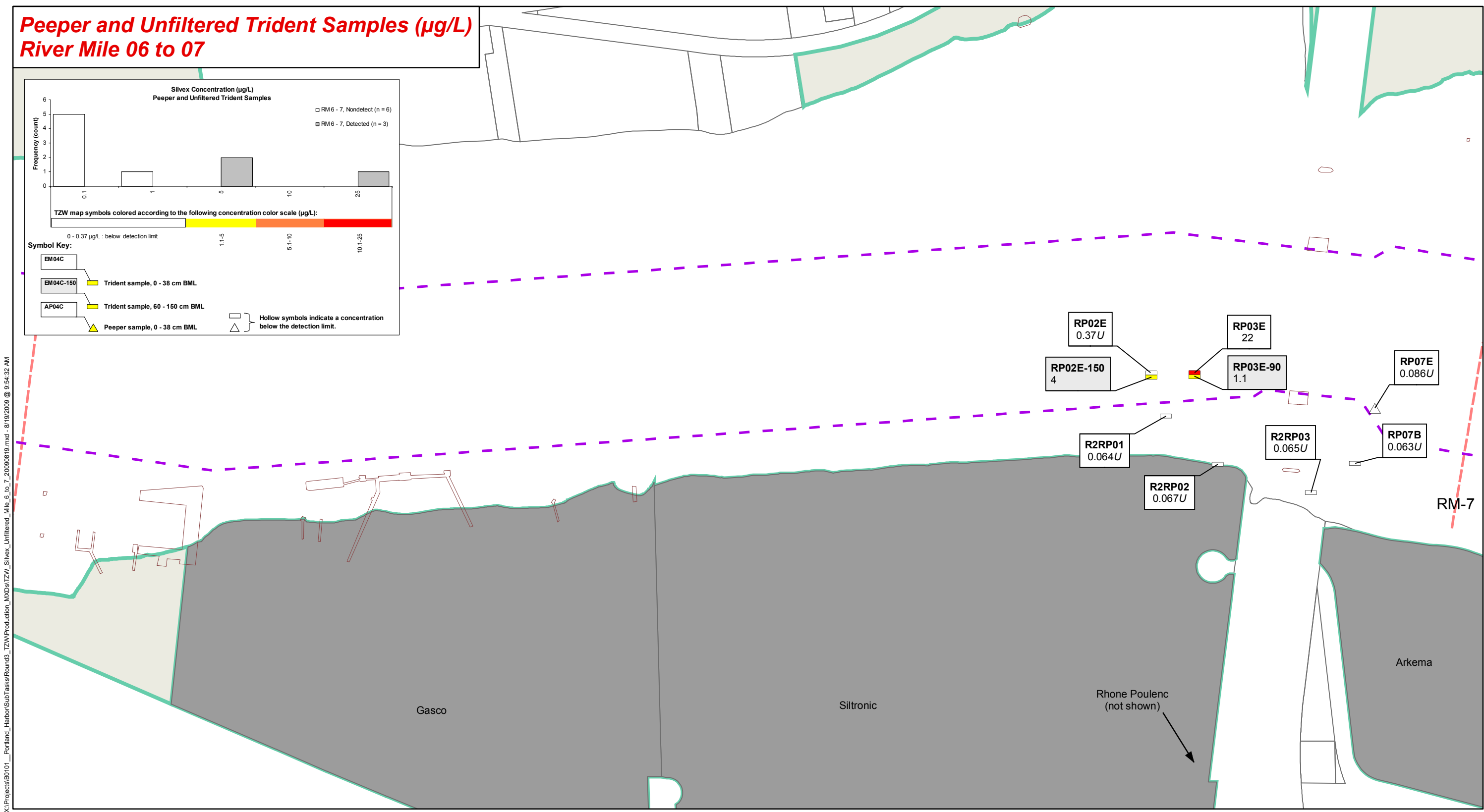
Qualifiers:

T	Mathematically derived value.
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U	The analyte was not detected above the reported sample quantitation limit.
UJ	The analyte was not detected above the reported sample quantitation limit; however, the reported quantitation limit was approximated by the analytical laboratory.
A	Total value based on a limited number of analytes.

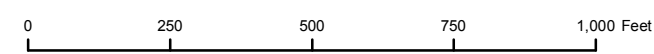
Peeper and Unfiltered Trident Samples (µg/L)
River Mile 06 to 07



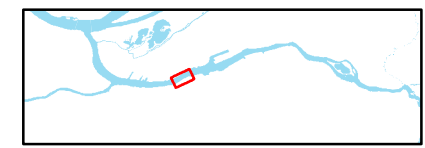
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- Map Features
- Docks and Structures
 - Navigation Channel
 - River Miles
 - GWPA Study Site
 - Upland ECSI Sites (2008)
 - Waterfront Taxlots



FEATURE SOURCES:
Property and Taxlot Boundaries: Metro RLIS
Channel & River miles: US Army Corps of Engineers.
Docks & In-water Structures: digitized from October 2001 0.33 ft. resolution color orthophotos

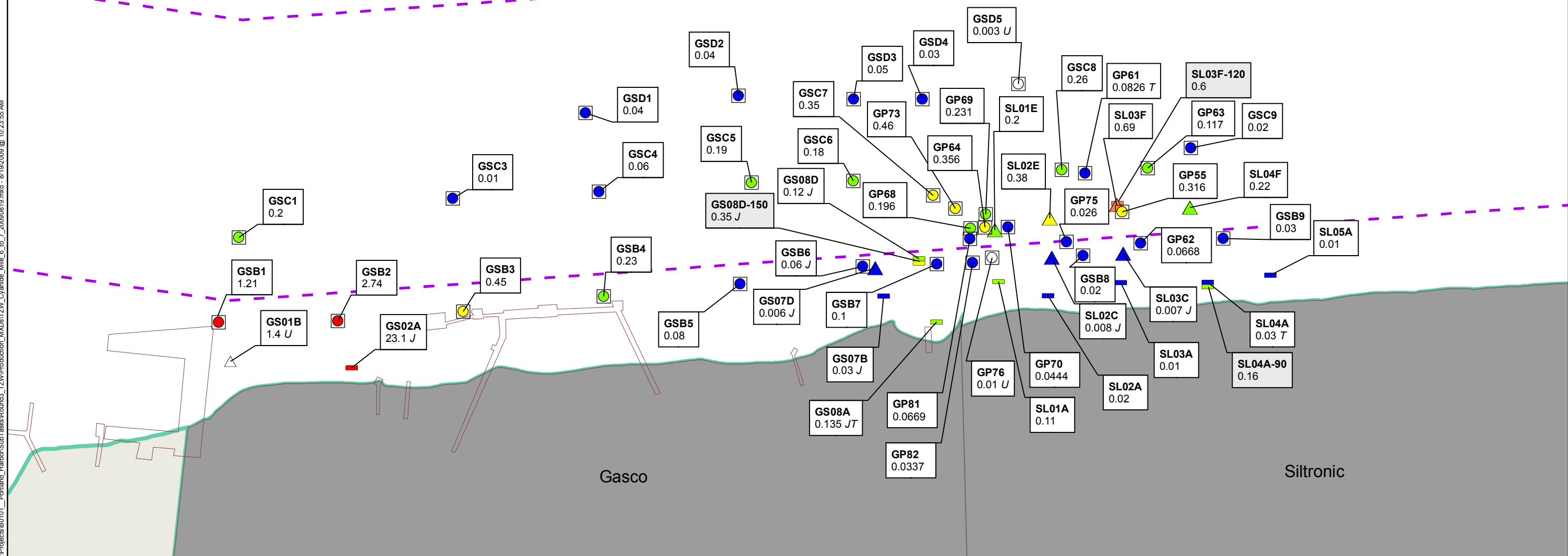
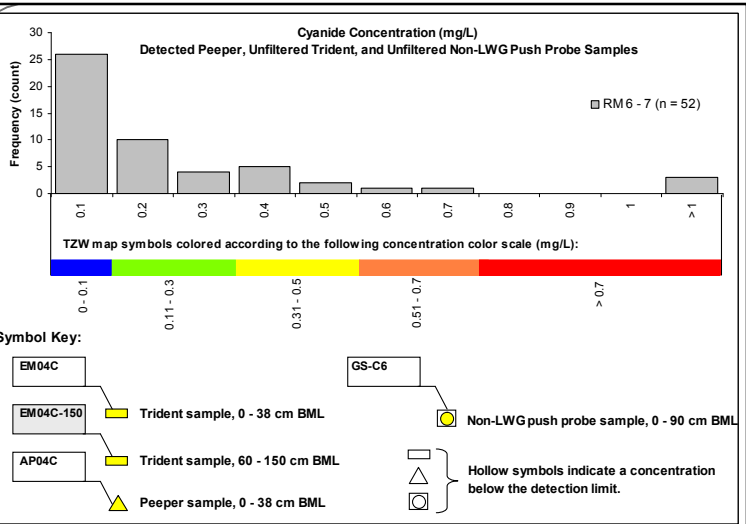


PS_t Indicates sample collected during the GWPA Pilot Study by Trident sampler.
PS_p Indicates sample collected during the GWPA Pilot Study by small-volume peeper.

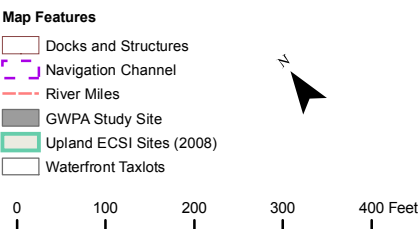
Qualifiers:

- T Mathematically derived value.
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- UJ The analyte was not detected above the reported sample quantitation limit; however, the reported quantitation limit was approximated by the analytical laboratory.
- A Total value based on a limited number of analytes.

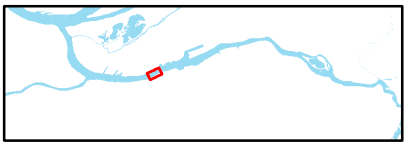
Peeper and Unfiltered Trident Samples (all mg/L)
River Mile 06 to 07



X:\Projects\B0101_Portland_Harbor\SubTasks\Round3_TZW\Production_MXD\st\TZW_Cyanide_Mile_6_to_7_20090819.mxd - 8/19/2009 @ 10:23:55 AM



FEATURE SOURCES:
Property and Taxlot Boundaries: Metro RLIS
Channel & River miles: US Army Corps of Engineers.
Docks & In-water Structures: digitized from October 2001 0.33 ft. resolution color orthophotos



PS_t Indicates sample collected during the GWPA Pilot Study by Trident sampler.
PS_p Indicates sample collected during the GWPA Pilot Study by small-volume peeper.

Qualifiers:
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J The associated numerical value was approximated by the analytical laboratory.
U The analyte was not detected above the reported sample quantitation limit.
UJ The analyte was not detected above the reported sample quantitation limit; however, the reported quantitation limit was approximated by the analytical laboratory.
A Total value based on a limited number of analytes.

X:\Projects\B0101 Portland Harbor\SubTasks\Round3 TZWP\Production MXDs\TZW Perchlorate Mille 7 to 8 20090401.mxd - 4/1/2009 @ 4:30:22 PM



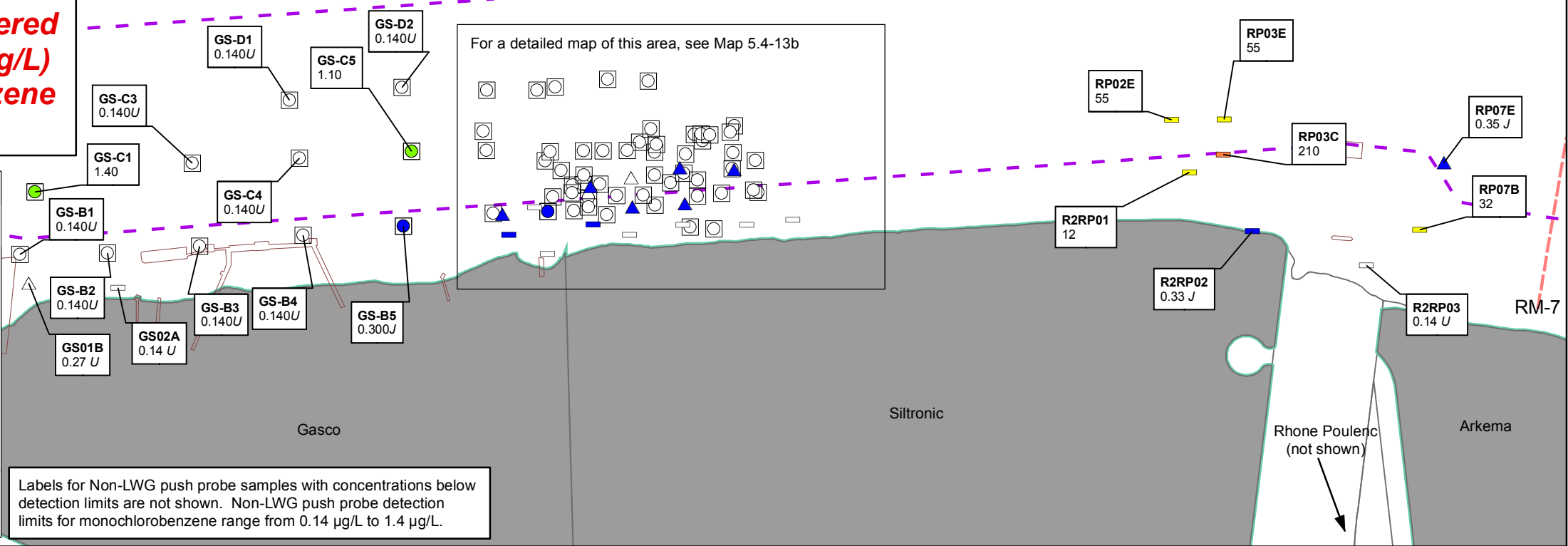
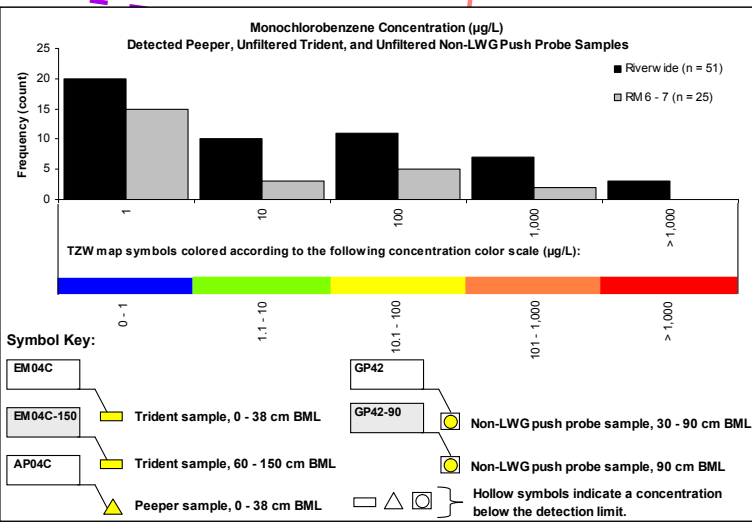
0 100 200 300 400 Feet

Qualifiers:	
T	Mathematically derived value.
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UJ	The analyte was not detected above the reported sample quantitation limit; however, the reported quantitation limit was approximated by the analytical laboratory.
A	Total value based on a limited number of analytes.

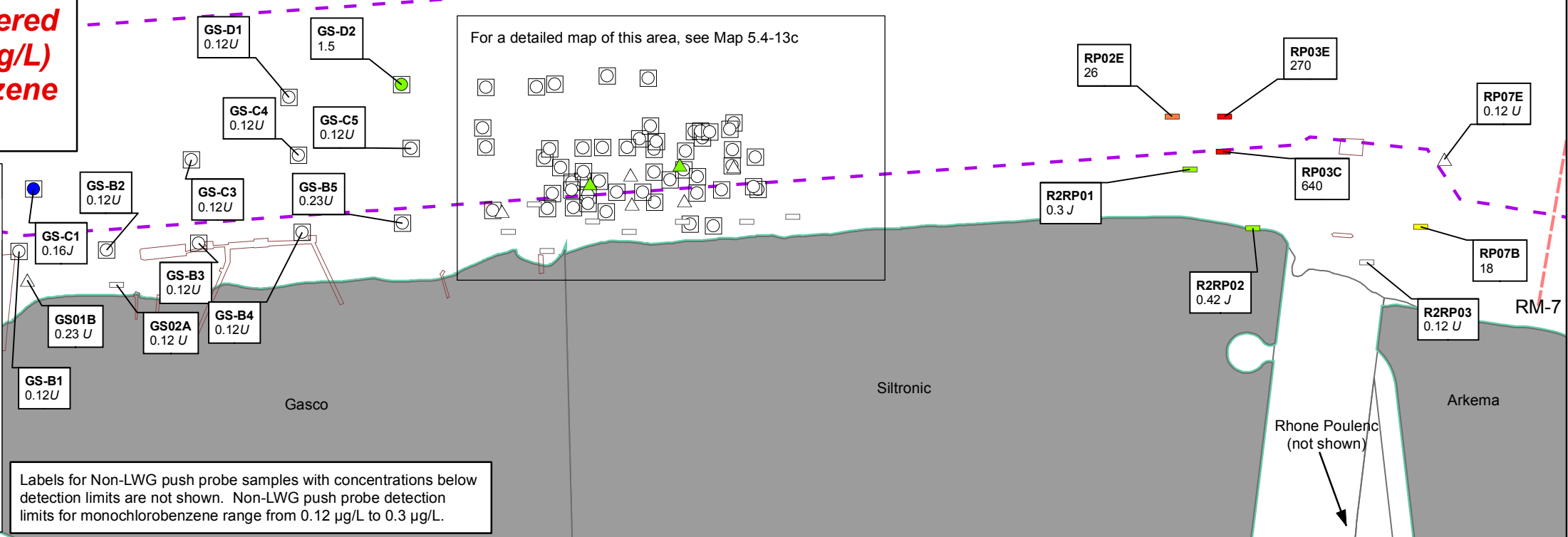
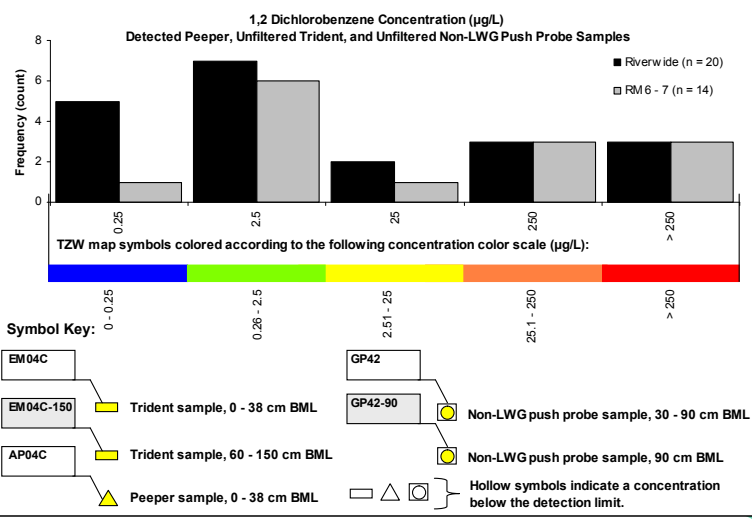
Map D4.2-8
Portland Harbor RI/FS
Remedial Investigation Report
Transition Zone Water Chemistry
Perchlorate (µg/L)
River Mile 07 to 08

X:\Projects\B0101_Portland_Harbor\SubTasks\Round3_TZW\Production_MXD\TZW_MCB_Mile_6_to_7_Shallow_20090819.mxd - 8/19/2009 @ 2:58:38 PM

**Peeper, Unfiltered Trident, and Unfiltered Non-LWG Push Probe Samples (all $\mu\text{g/L}$)
River Mile 06 to 07 - Monochlorobenzene
Shallow Samples**

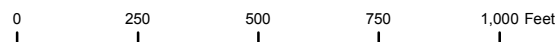


**Peeper, Unfiltered Trident, and Unfiltered Non-LWG Push Probe Samples (all $\mu\text{g/L}$)
River Mile 06 to 07 - 1,2-Dichlorobenzene
Shallow Samples**

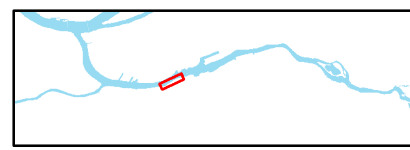


Map Features

- Docks and Structures
- Navigation Channel
- River Miles
- GWPA Study Site
- Upland ECSI Sites (2008)
- Waterfront Taxlots



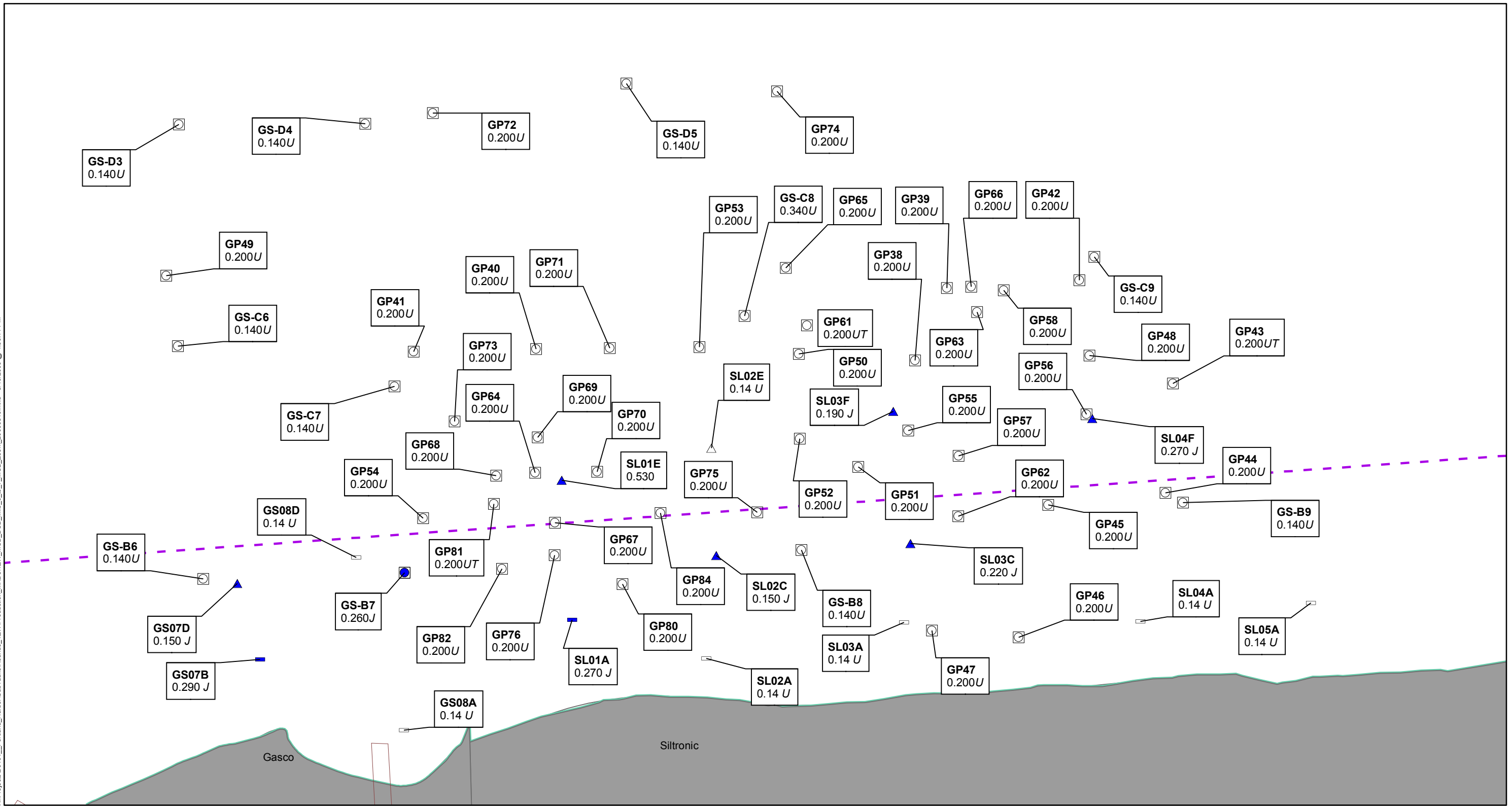
FEATURE SOURCES:
Property and Taxlot Boundaries: Metro RLIS
Channel & River miles: US Army Corps of Engineers.
Docks & In-water Structures: digitized from October 2001 0.33 ft. resolution color orthophotos



Qualifiers:

- T: Mathematically derived value.
- J: The associated numerical value was approximated by the analytical laboratory.
- U: The analyte was not detected above the reported sample quantitation limit.
- UJ: The analyte was not detected above the reported sample quantitation limit; however, the reported quantitation limit was approximated by the analytical laboratory.
- A: Total value based on a limited number of analytes.

X:\Projects\B0101_Portland_Harbor\SubTasks\Round3_TZW\Production_MXD\TZW_MCB_DCB_Mile_6_to_7_MCB_Zoom_20090819.mxd - 8/19/2009 @ 4:30:14 PM



Map Features

- Docks and Structures
- Navigation Channel
- River Miles
- GWPA Study Site
- Upland ECSI Sites (2008)
- Waterfront Taxlots

0 310 620 930 1,240 Feet

FEATURE SOURCES:
Property and Taxlot Boundaries: Metro RLIS
Channel & River miles: US Army Corps of Engineers.
Docks & In-water Structures: digitized from October
2001 0.33 ft. resolution color orthophotos

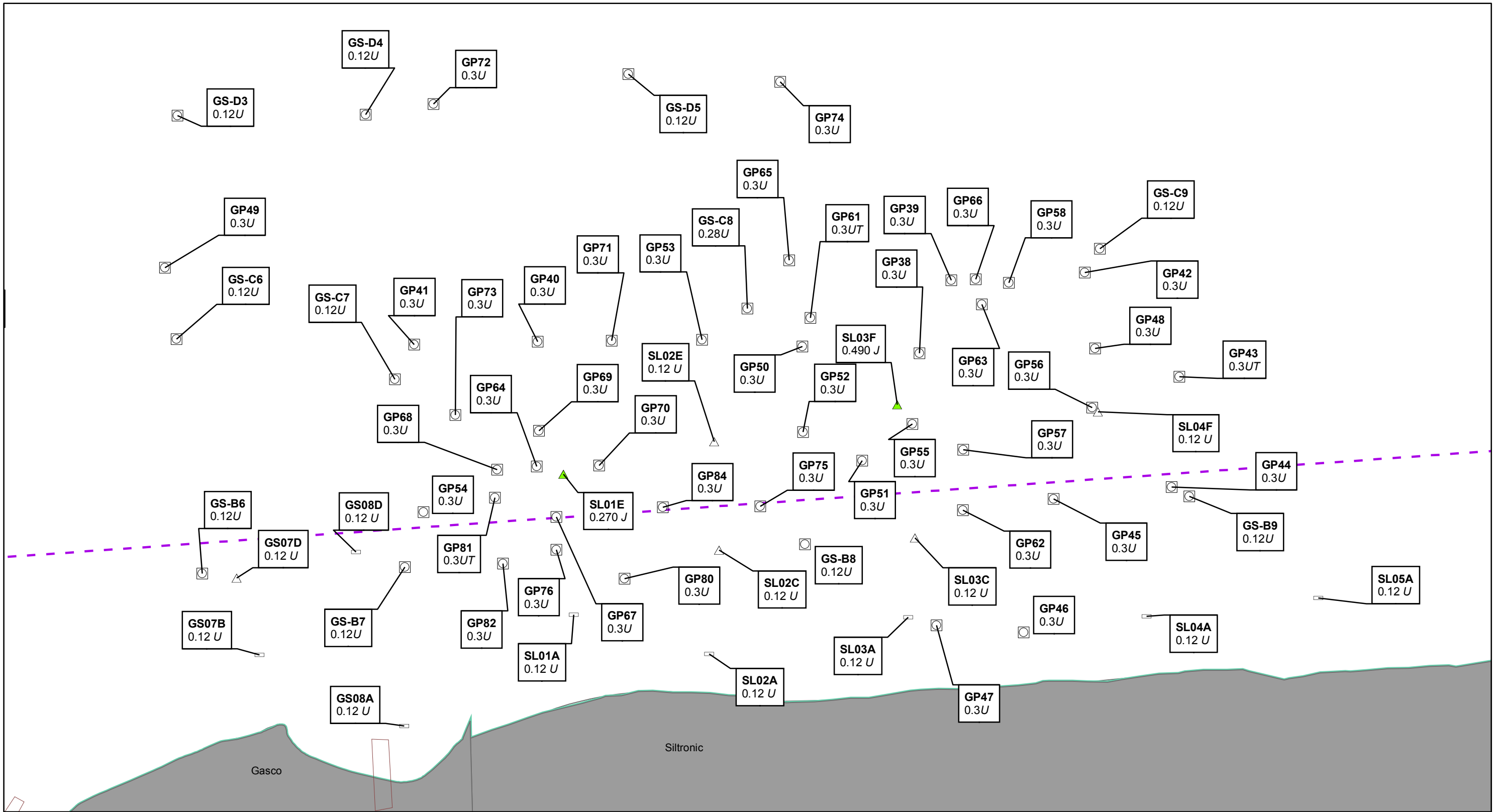


Qualifiers:

- T Mathematically derived value.
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- U The analyte was not detected above the reported sample quantitation limit.
- UJ The analyte was not detected above the reported sample quantitation limit; however, the reported quantitation limit was approximated by the analytical laboratory.
- A Total value based on a limited number of analytes.

Map D4.2-9b
Portland Harbor RI/FS
Remedial Investigation Report
Transition Zone Water Chemistry
Monochlorobenzene (µg/L)
River Mile 06 to 07, Shallow Zoom

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FEATURE SOURCES:
Property and Taxlot Boundaries: Metro RLIS
Channel & River miles: US Army Corps of Engineers.
Docks & In-water Structures: digitized from October
2001 0.33 ft. resolution color orthophotos



Qualifiers:
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UJ The analyte was not detected above the reported sample quantitation limit; however,
the reported quantitation limit was approximated by the analytical laboratory.
A Total value based on a limited number of analytes.

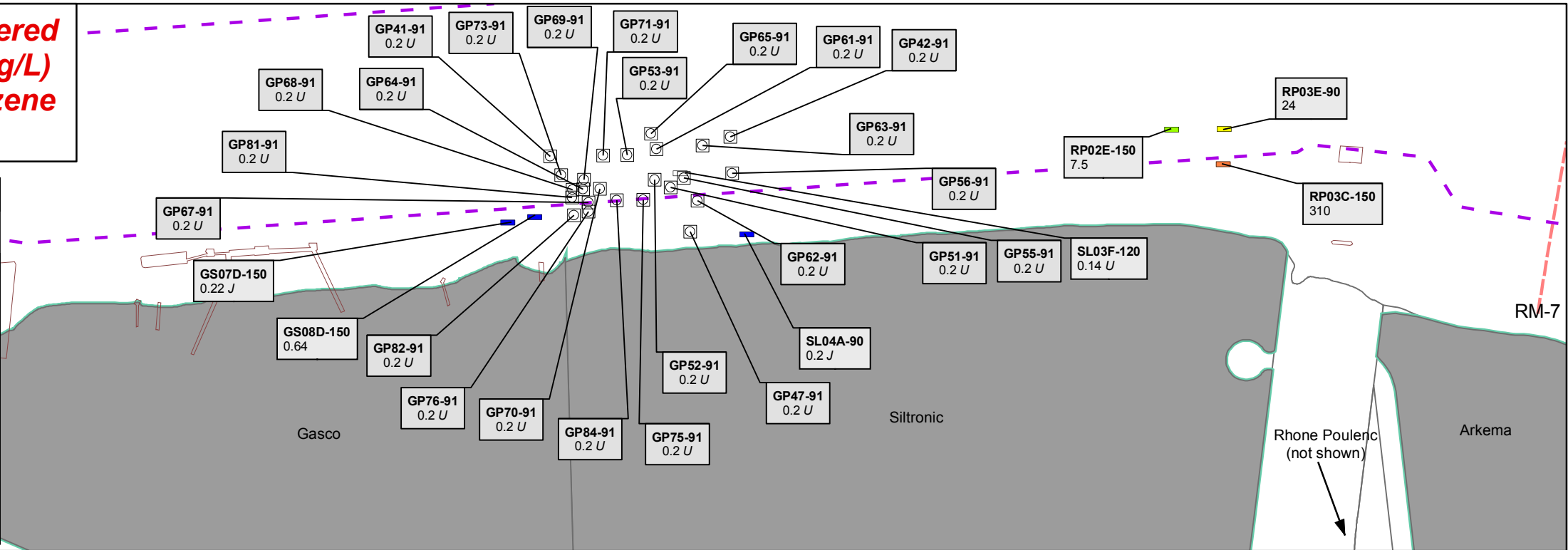
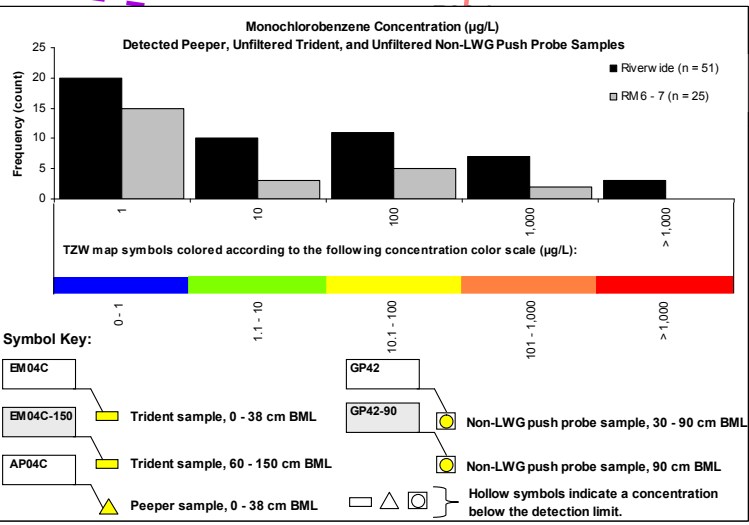
Map Features
Docks and Structures
Navigation Channel
River Miles
GWPA Study Site
Upland Sites (2008)
Waterfront Taxlots

0 60 120 180 240 Feet

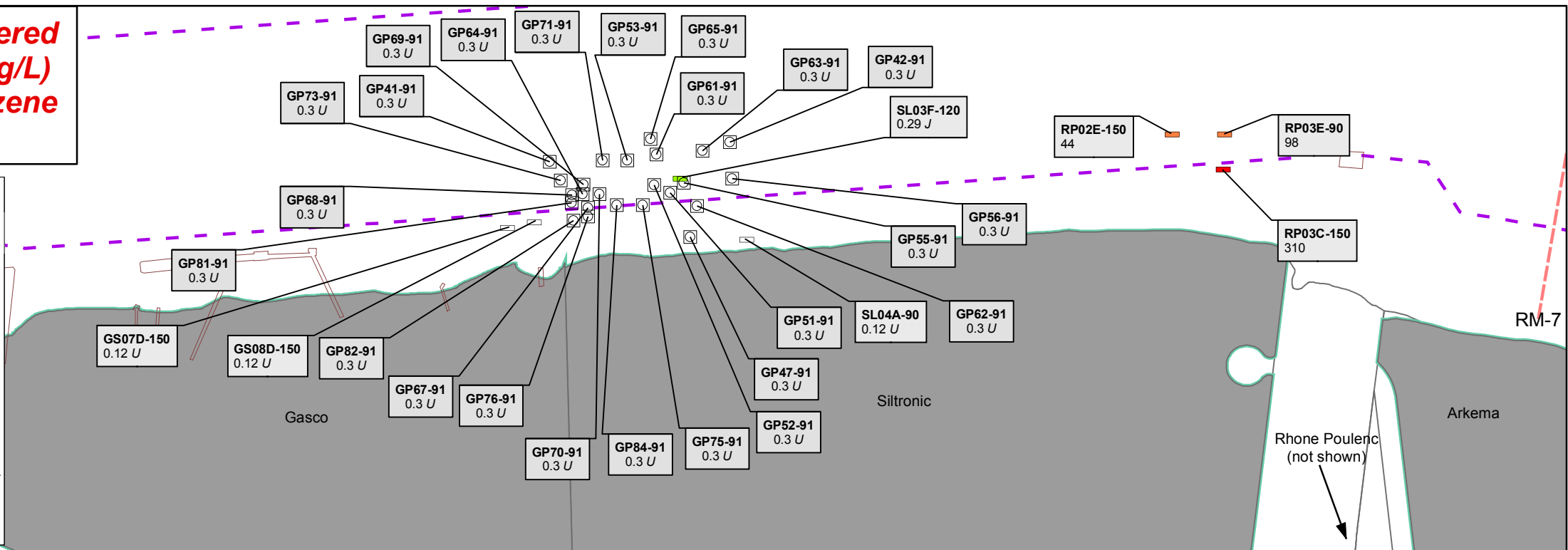
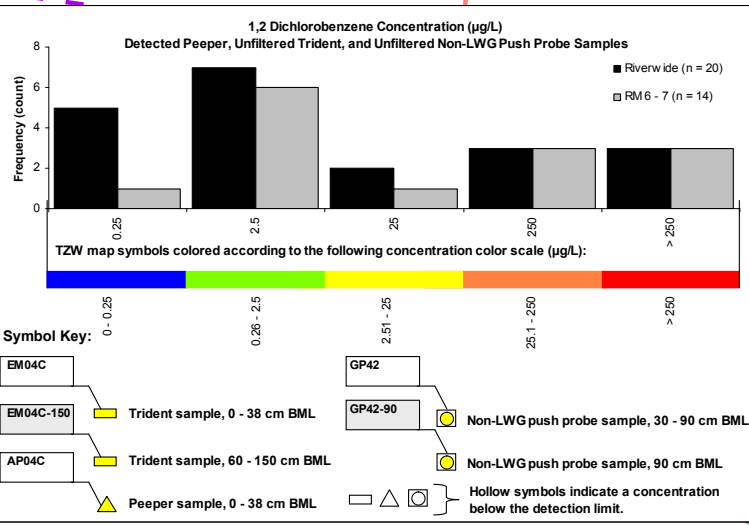
Map D4.2-9c
Portland Harbor RI/FS
Remedial Investigation Report
Transition Zone Water Chemistry
1,2-Dichlorobenzene (µg/L)
River Mile 06 to 07, Shallow Zoom

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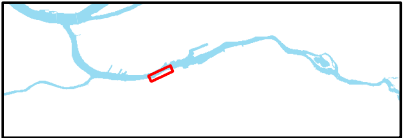
**Peeper, Unfiltered Trident, and Unfiltered Non-LWG Push Probe Samples (all $\mu\text{g/L}$)
River Mile 06 to 07 - Monochlorobenzene Deep Samples**



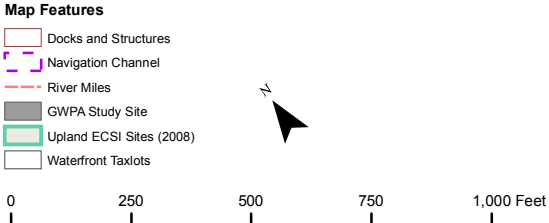
**Peeper, Unfiltered Trident, and Unfiltered Non-LWG Push Probe Samples (all $\mu\text{g/L}$)
River Mile 06 to 07 - 1,2-Dichlorobenzene Deep Samples**



FEATURE SOURCES:
Property and Taxlot Boundaries: Metro RLIS
Channel & River miles: US Army Corps of Engineers.
Docks & In-water Structures: digitized from October 2001 0.33 ft. resolution color orthophotos

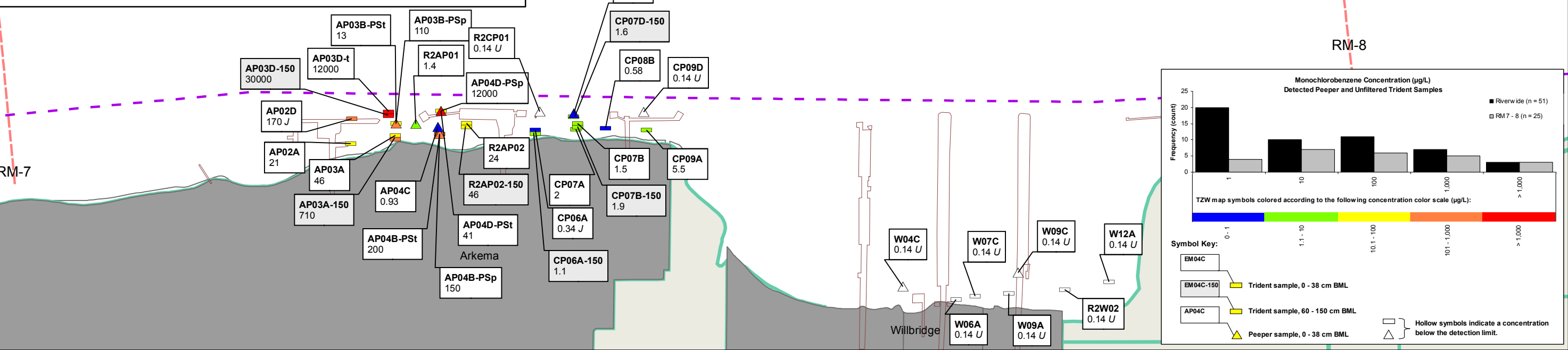


Qualifiers:
T Mathematically derived value.
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A Total value based on a limited number of analytes.

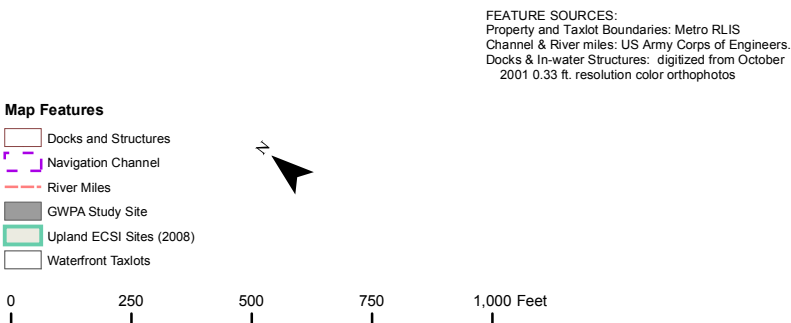
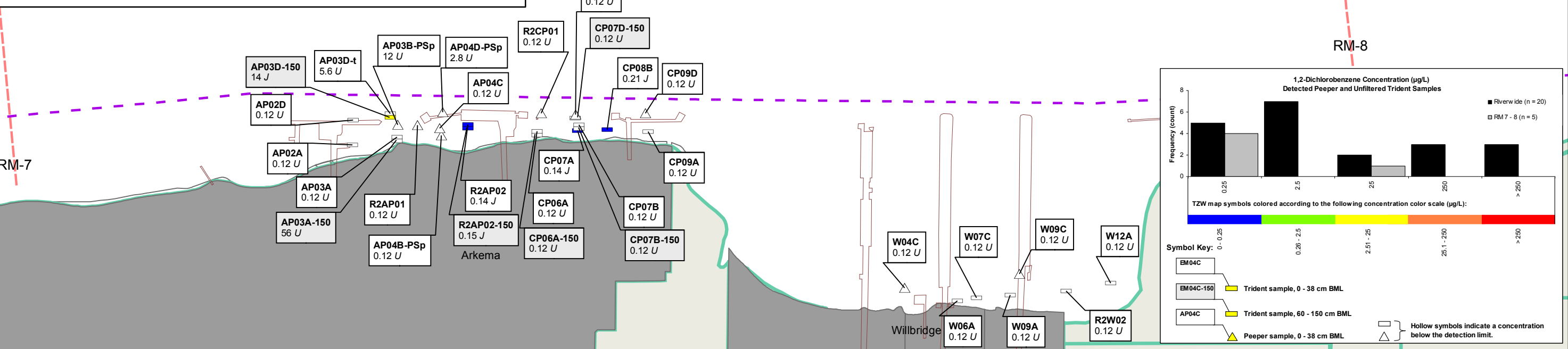


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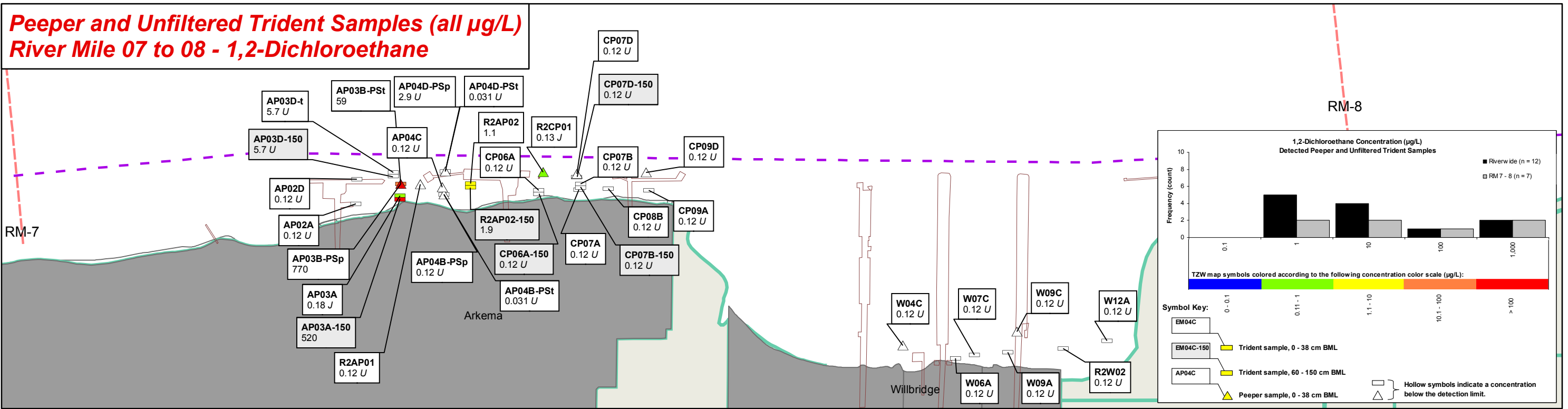
**Peeper and Unfiltered Trident Samples (all $\mu\text{g/L}$)
River Mile 07 to 08 - Monochlorobenzene**



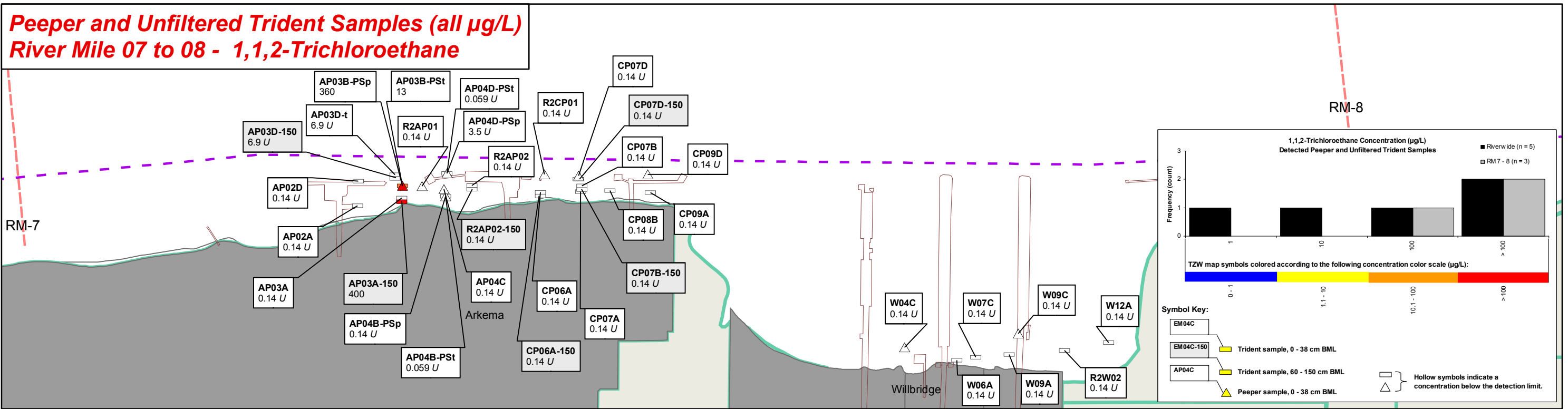
**Peeper and Unfiltered Trident Samples (all $\mu\text{g/L}$)
River Mile 07 to 08 - 1,2-Dichlorobenzene**



**Peeper and Unfiltered Trident Samples (all µg/L)
River Mile 07 to 08 - 1,2-Dichloroethane**



**Peeper and Unfiltered Trident Samples (all µg/L)
River Mile 07 to 08 - 1,1,2-Trichloroethane**



FEATURE SOURCES:
Property and Taxlot Boundaries: Metro RLIS
Channel & River miles: US Army Corps of Engineers.
Docks & In-water Structures: digitized from October
2001 0.33 ft. resolution color orthophotos



PSt Indicates sample collected during the GWPA Pilot Study by Trident sampler.
PSp Indicates sample collected during the GWPA Pilot Study by small-volume peeper.

Qualifiers:
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UJ The analyte was not detected above the reported sample quantitation limit; however,
the reported quantitation limit was approximated by the analytical laboratory.
A Total value based on a limited number of analytes.

Map Features

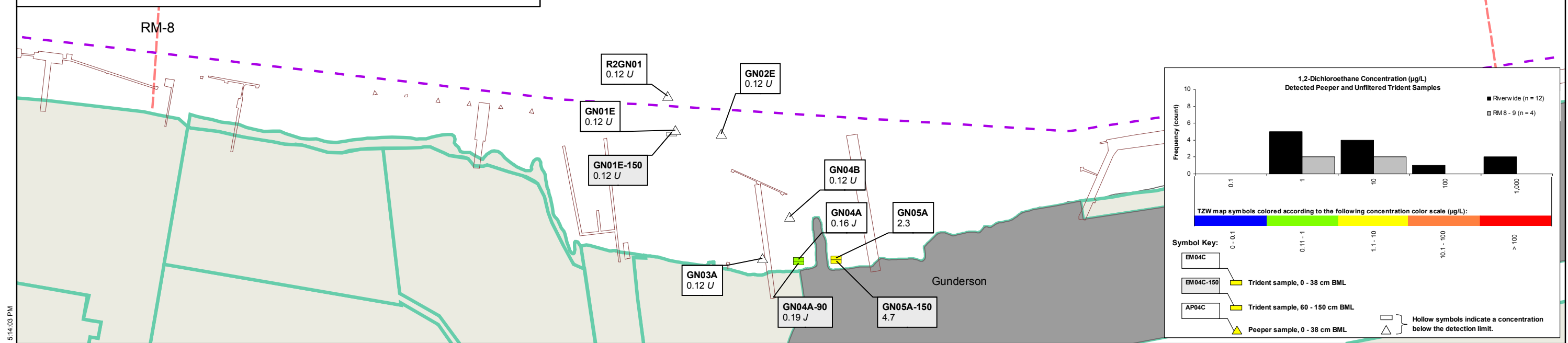
- Docks and Structures
- Navigation Channel
- River Miles
- GWPA Study Site
- Upland ECSI Sites (2008)
- Waterfront Taxlots

0 250 500 750 1,000 Feet

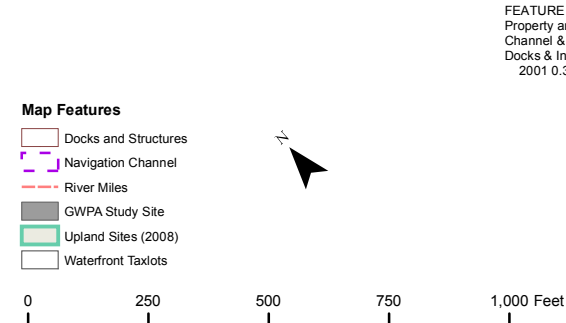
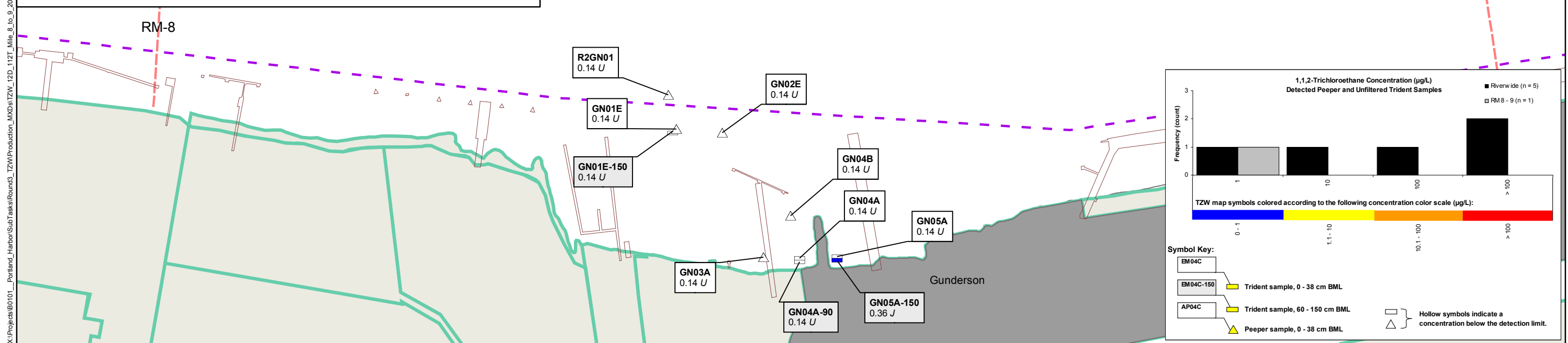
Map D4.2-10a
Portland Harbor RI/FS
Remedial Investigation Report
Transition Zone Water Chemistry
1,2-Dichloroethane (µg/L) and 1,1,2-Trichloroethane (µg/L)
River Mile 07 to 08

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**Peeper and Unfiltered Trident Samples (all µg/L)
River Mile 08 to 09 - 1,2-Dichloroethane**



**Peeper and Unfiltered Trident Samples (all µg/L)
River Mile 08 to 09 - 1,1,2-Trichloroethane**



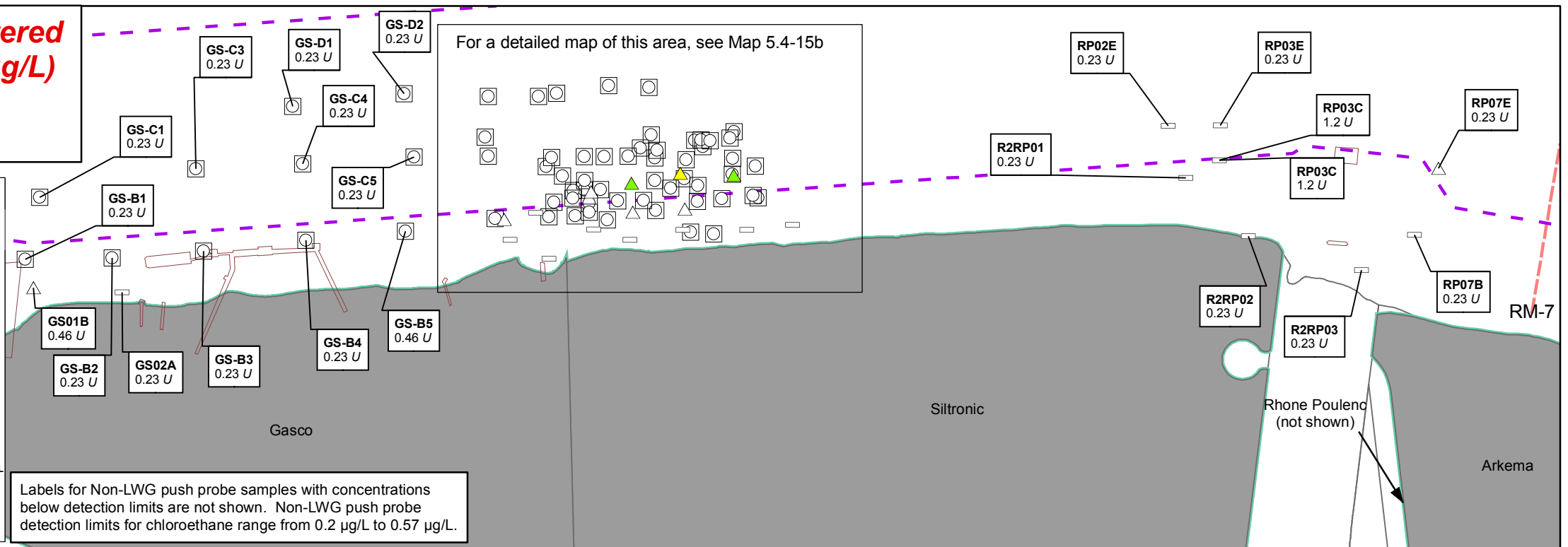
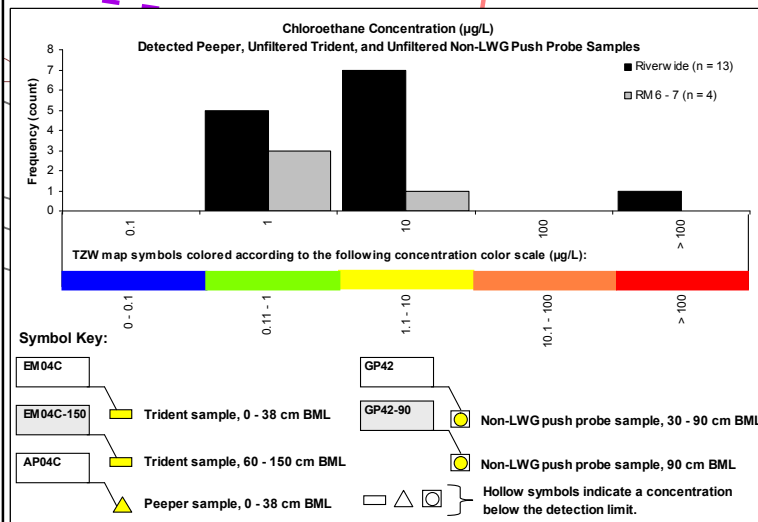
FEATURE SOURCES:
Property and Taxlot Boundaries: Metro RLIS
Channel & River miles: US Army Corps of Engineers.
Docks & In-water Structures: digitized from October
2001 0.33 ft. resolution color orthophotos



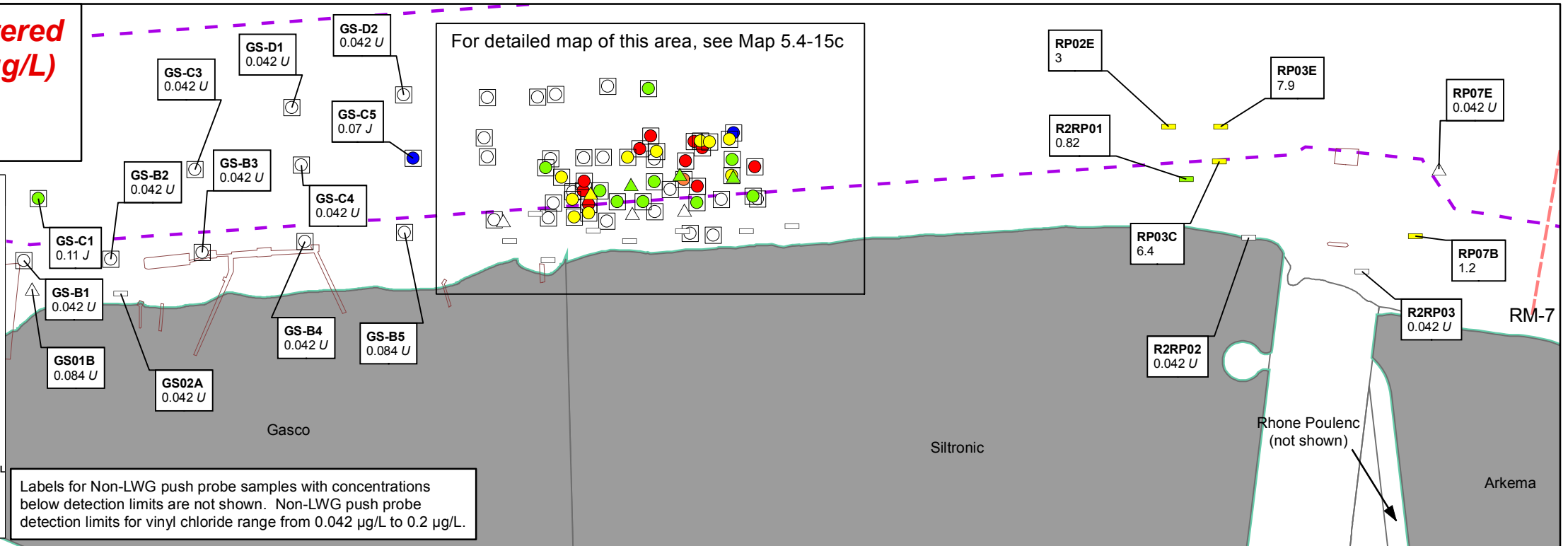
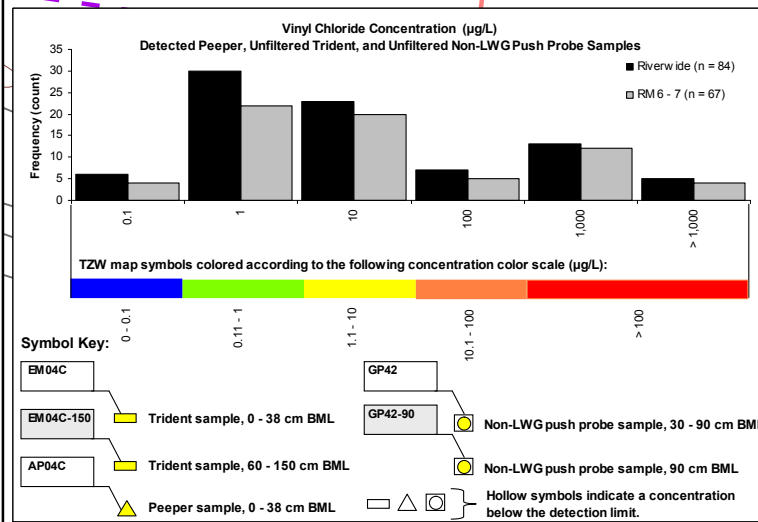
Tabular Results Notes:

- T Mathematically derived value.
- J The associated numerical value was approximated by the analytical laboratory.
- U The analyte was not detected above the reported sample quantitation limit.
- UJ The analyte was not detected above the reported sample quantitation limit; however, the reported quantitation limit was approximated by the analytical laboratory.
- A Total value based on a limited number of analytes.

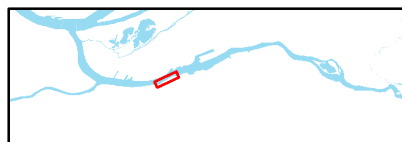
**Peeper, Unfiltered Trident, and Unfiltered Non-LWG Push Probe Samples (all $\mu\text{g/L}$)
River Mile 06 to 07 - Chloroethane
Shallow Samples**



**Peeper, Unfiltered Trident, and Unfiltered Non-LWG Push Probe Samples (all $\mu\text{g/L}$)
River Mile 06 to 07 - Vinyl Chloride
Shallow Samples**



FEATURE SOURCES:
Property and Taxlot Boundaries: Metro RLIS
Channel & River miles: US Army Corps of Engineers.
Docks & In-water Structures: digitized from October 2001 0.33 ft. resolution color orthophotos

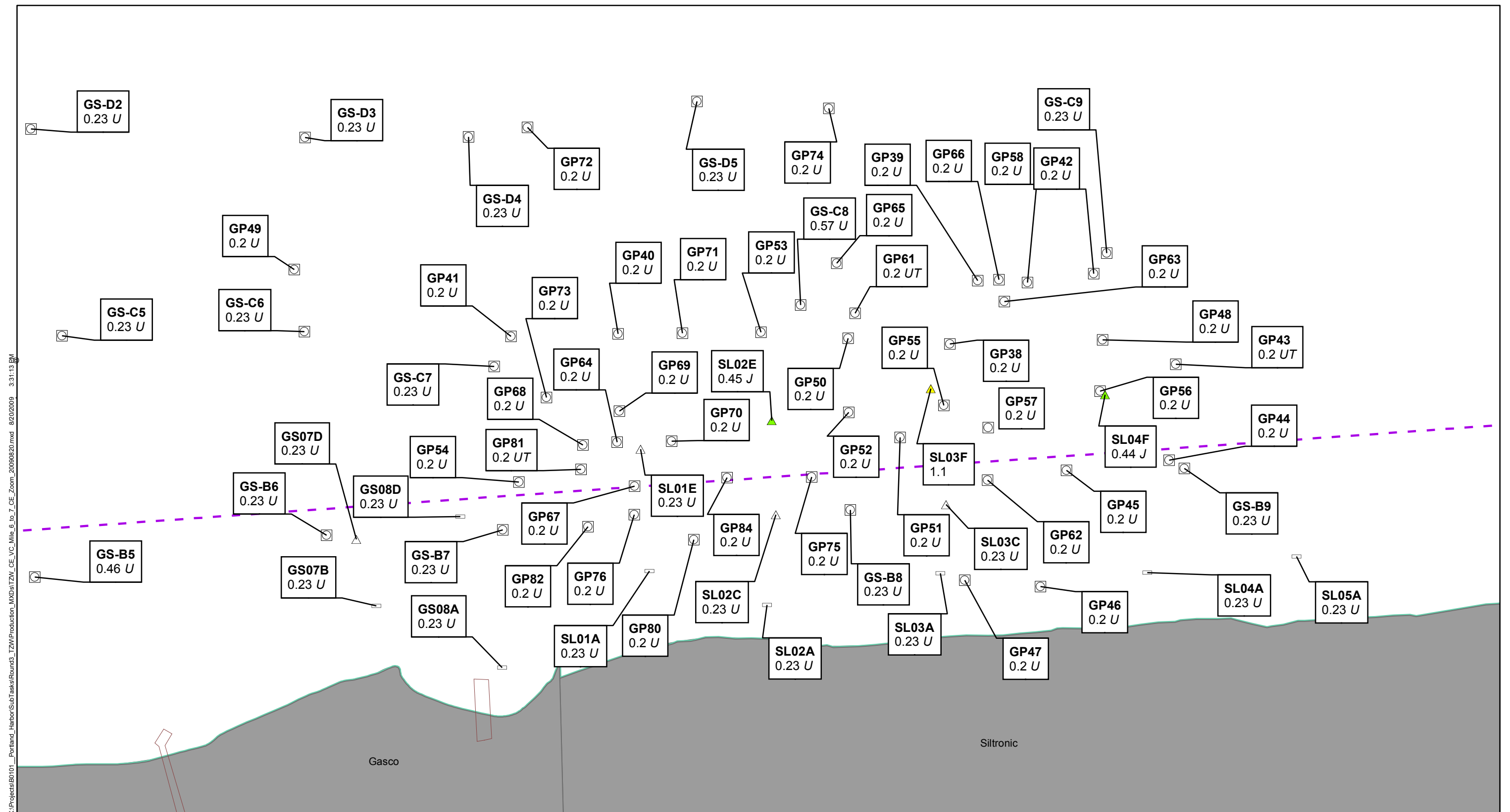


Qualifiers:
T Mathematically derived value.
J The associated numerical value was approximated by the analytical laboratory.
U The analyte was not detected above the reported sample quantitation limit.
UJ The analyte was not detected above the reported sample quantitation limit; however, the reported quantitation limit was approximated by the analytical laboratory.
A Total value based on a limited number of analytes.

Map Features

- Docks and Structures
- Navigation Channel
- River Miles
- GWPA Study Site
- Upland ECSI Sites (2008)
- Waterfront Taxlots

0 250 500 750 1,000 Feet



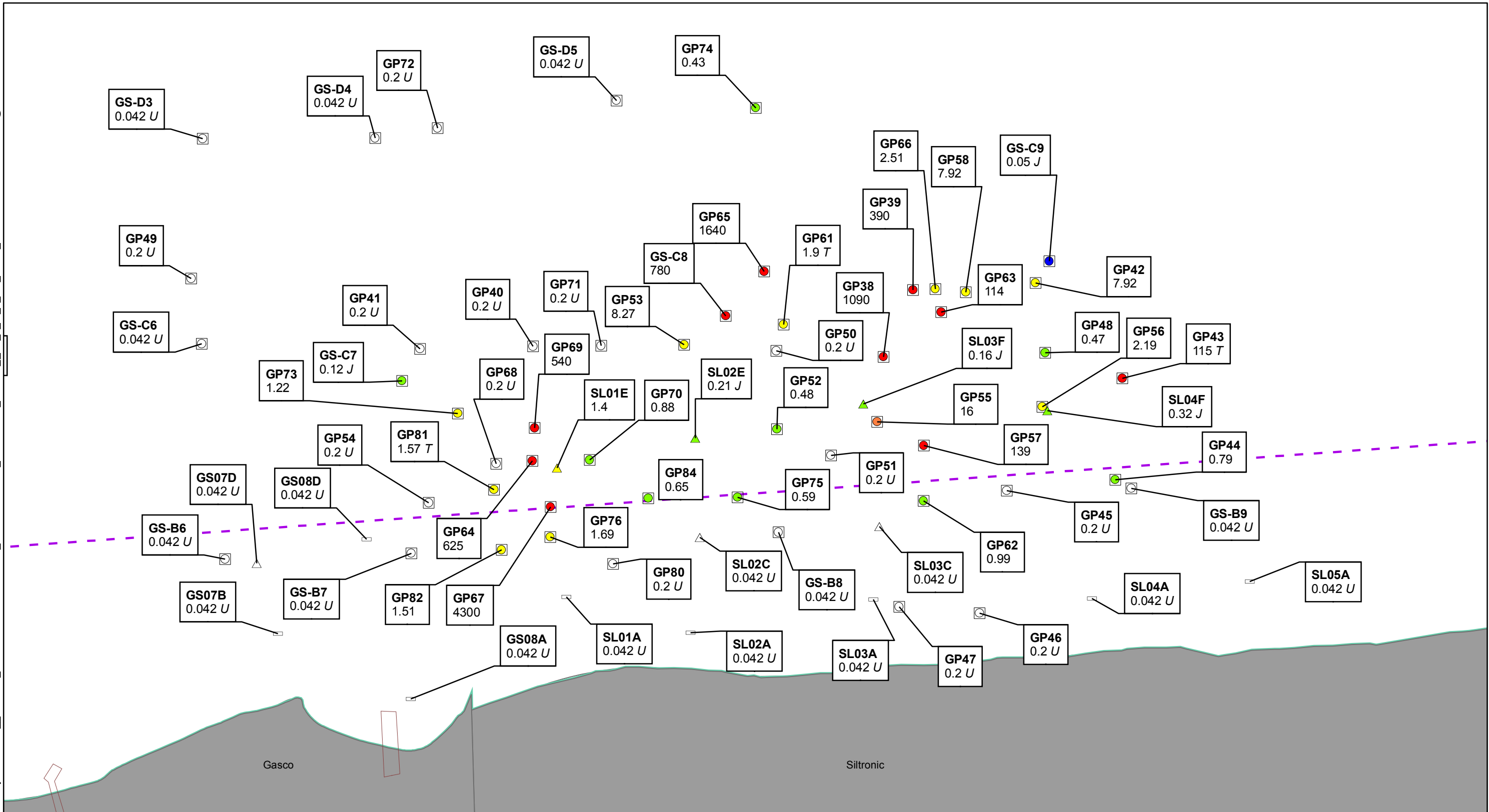
Map Features

FEATURE SOURCES:
Property and Taxlot Boundaries: Metro RLIS
Channel & River miles: US Army Corps of Engineers.
Docks & In-water Structures: digitized from October
2001 0.33 ft. resolution color orthophotos

PS_t Indicates sample collected during the GWPA Pilot Study by Trident sampler.
PS_p Indicates sample collected during the GWPA Pilot Study by small-volume peeper.

Map D4.2-11b
Portland Harbor RI/FS
Remedial Investigation Report
Transition Zone Water Chemistry
Chloroethane (µg/L)
River Mile 06 to 07, Shallow Zoom

X:\Projects\B0101__Portland_Harbor\SubTasks\Round3_TZW\Production_MXD\TZW_CE_VC_Mile_6_to_7_VC_Zoom_20090401.mxd - 4/1/2009 @ 2:56:46 PM



Map Features

- Docks and Structures
- Navigation Channel
- River Miles
- GWPA Study Site
- Upland ECSI Sites (2008)
- Waterfront Taxlots



0 90 180 270 360 Feet

FEATURE SOURCES:
Property and Taxlot Boundaries: Metro RLIS
Channel & River miles: US Army Corps of Engineers.
Docks & In-water Structures: digitized from October 2001 0.33 ft. resolution color orthophotos



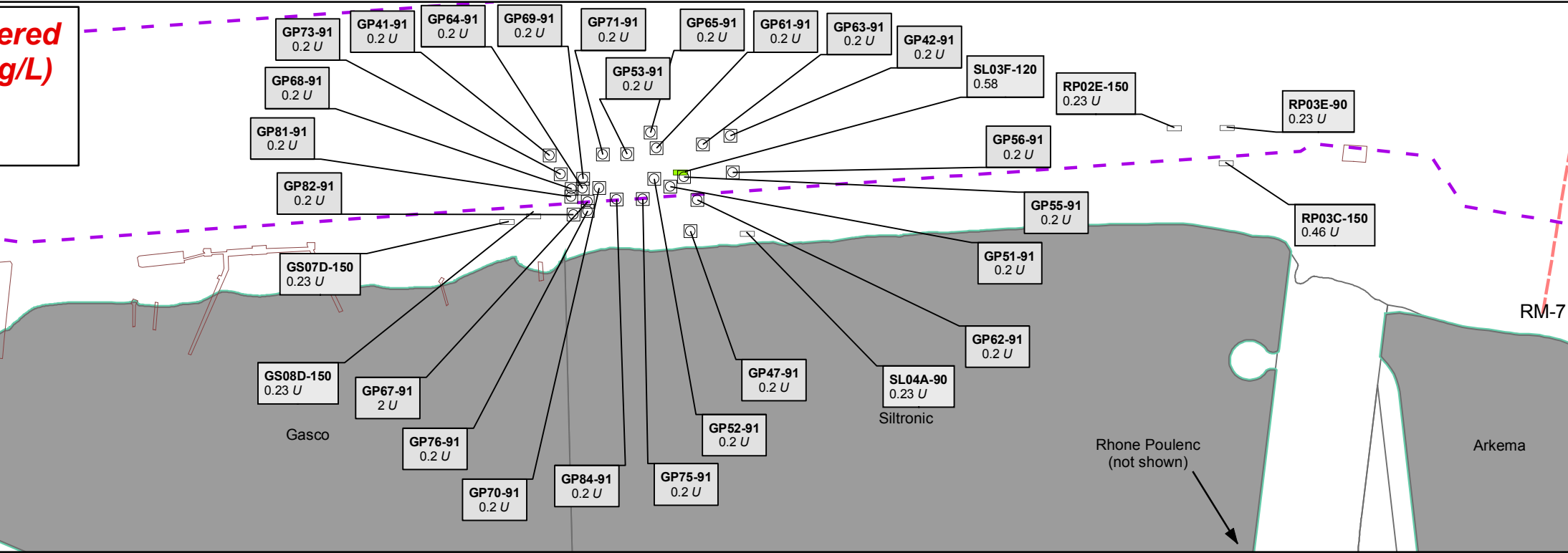
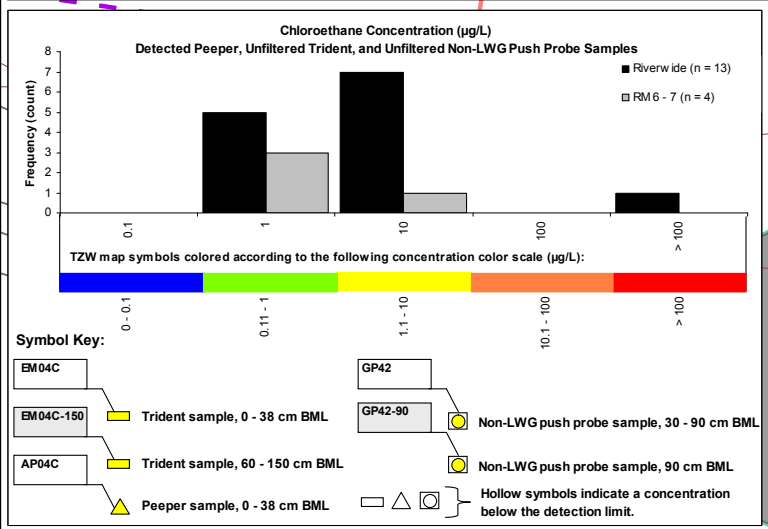
Pst Indicates sample collected during the GWPA Pilot Study by Trident sampler.
Psp Indicates sample collected during the GWPA Pilot Study by small-volume peeper.

Qualifiers:
T Mathematically derived value.
J The associated numerical value was approximated by the analytical laboratory.
U The analyte was not detected above the reported sample quantitation limit.
UJ The analyte was not detected above the reported sample quantitation limit; however, the reported quantitation limit was approximated by the analytical laboratory.
A Total value based on a limited number of analytes.

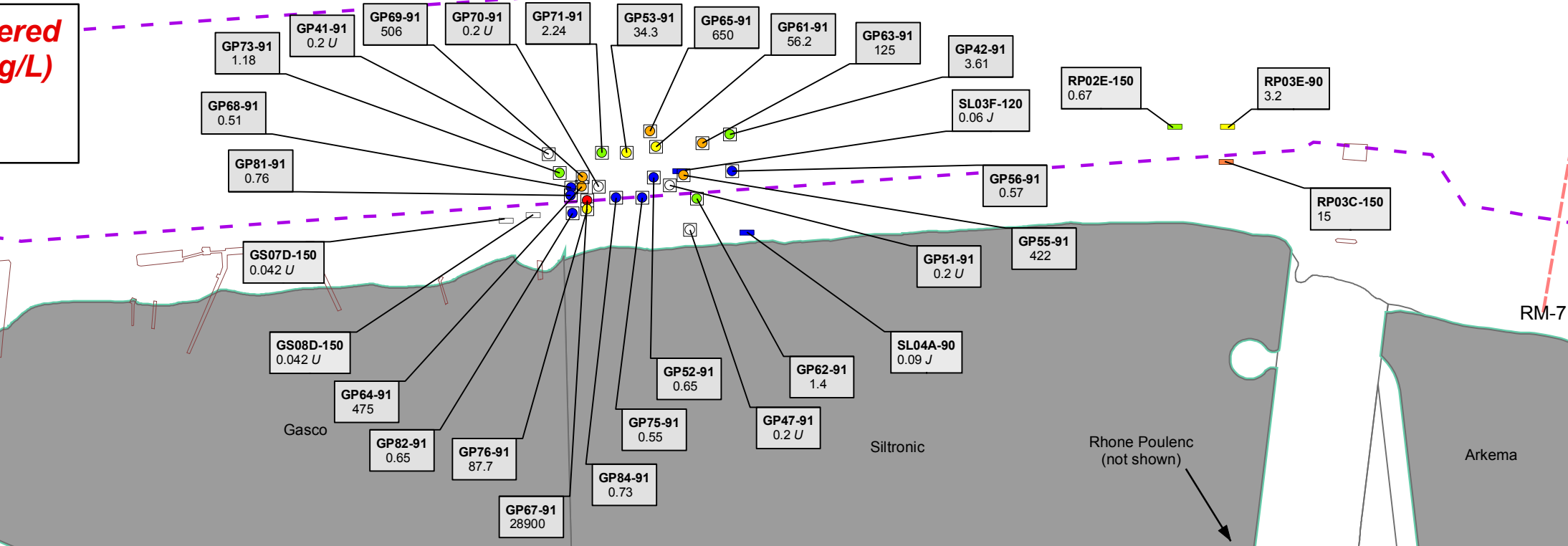
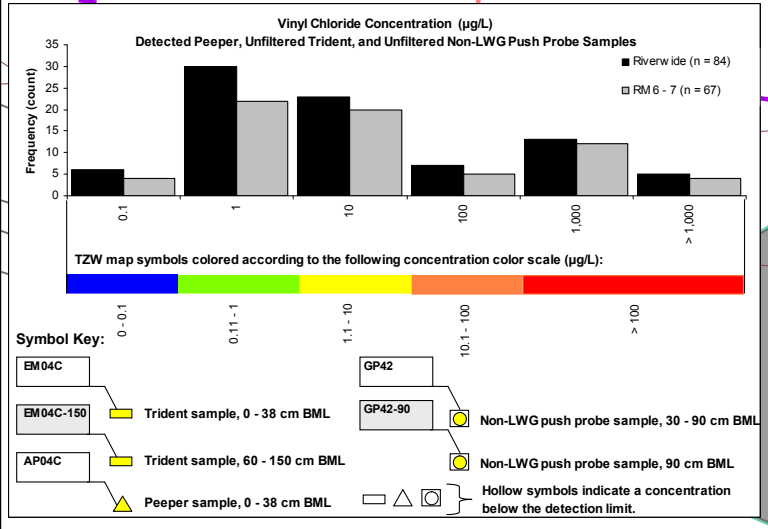
Map D4.2-11c
Portland Harbor RI/FS
Remedial Investigation Report
Transition Zone Water Chemistry
Vinyl Chloride (µg/L)
River Mile 06 to 07, Shallow Zoom

X:\Projects\0101_Portland_Harbor\SubTasks\Round3_TZW\Production_MXD\TZW_CE_VC_Mile_6_to_7_Deep_20090820.mxd - 8/20/2009 @ 2:50:44 PM

**Peeper, Unfiltered Trident, and Unfiltered Non-LWG Push Probe Samples (all $\mu\text{g/L}$)
River Mile 06 to 07 - Chloroethane
Deep Samples**



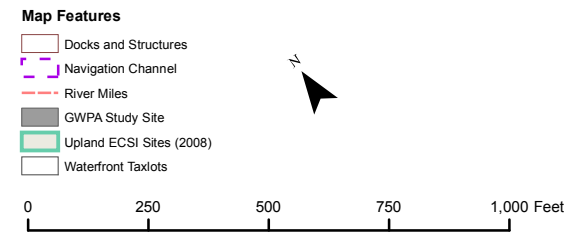
**Peeper, Unfiltered Trident, and Unfiltered Non-LWG Push Probe Samples (all $\mu\text{g/L}$)
River Mile 06 to 07 - Vinyl Chloride
Deep Samples**



FEATURE SOURCES:
Property and Taxlot Boundaries: Metro RLIS
Channel & River miles: US Army Corps of Engineers.
Docks & In-water Structures: digitized from October 2001 0.33 ft. resolution color orthophotos

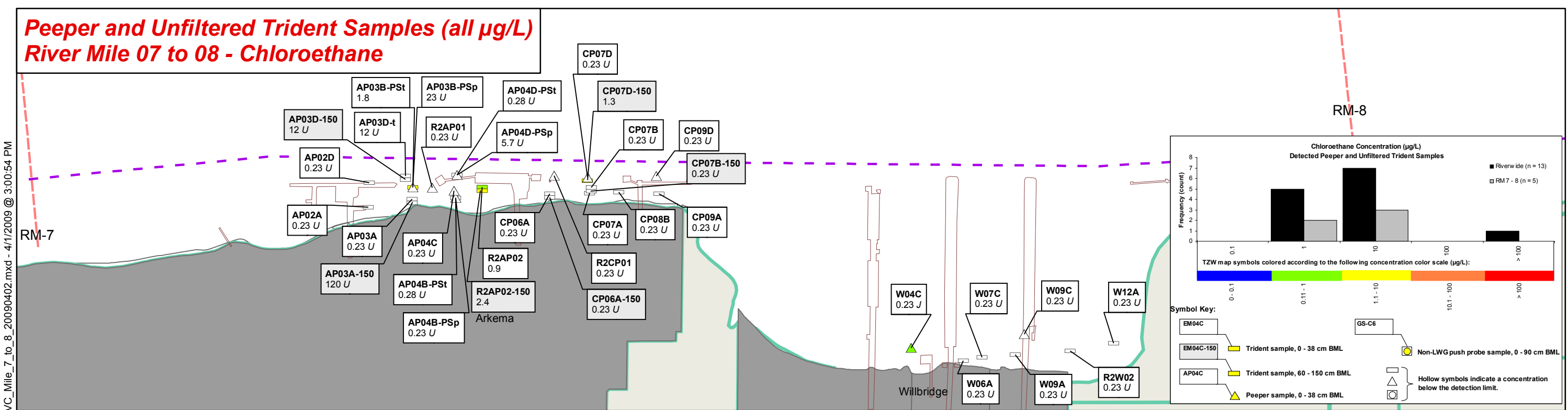


Qualifiers:
T Mathematically derived value.
J The associated numerical value was approximated by the analytical laboratory.
U The analyte was not detected above the reported sample quantitation limit.
UJ The analyte was not detected above the reported sample quantitation limit; however, the reported quantitation limit was approximated by the analytical laboratory.
A Total value based on a limited number of analytes.

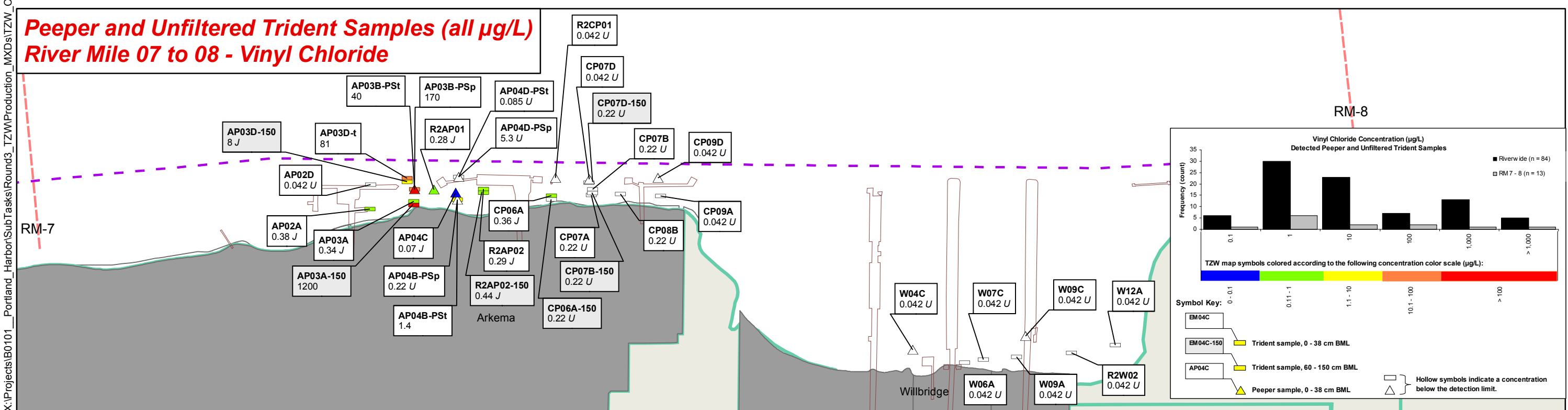


X:\Projects\B0101_Portland_Harbor\SubTasks\Round3_TZW\Production_MXD\TZW_CE_VC_Mile_7_to_8_20090402.mxd - 4/1/2009 @ 3:00:54 PM

**Peeper and Unfiltered Trident Samples (all µg/L)
River Mile 07 to 08 - Chloroethane**



**Peeper and Unfiltered Trident Samples (all µg/L)
River Mile 07 to 08 - Vinyl Chloride**

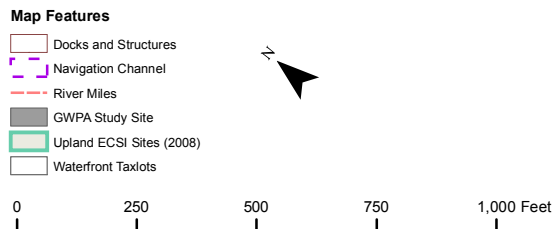


FEATURE SOURCES:
Property and Taxlot Boundaries: Metro RLIS
Channel & River miles: US Army Corps of Engineers.
Docks & In-water Structures: digitized from October
2001 0.33 ft. resolution color orthophotos



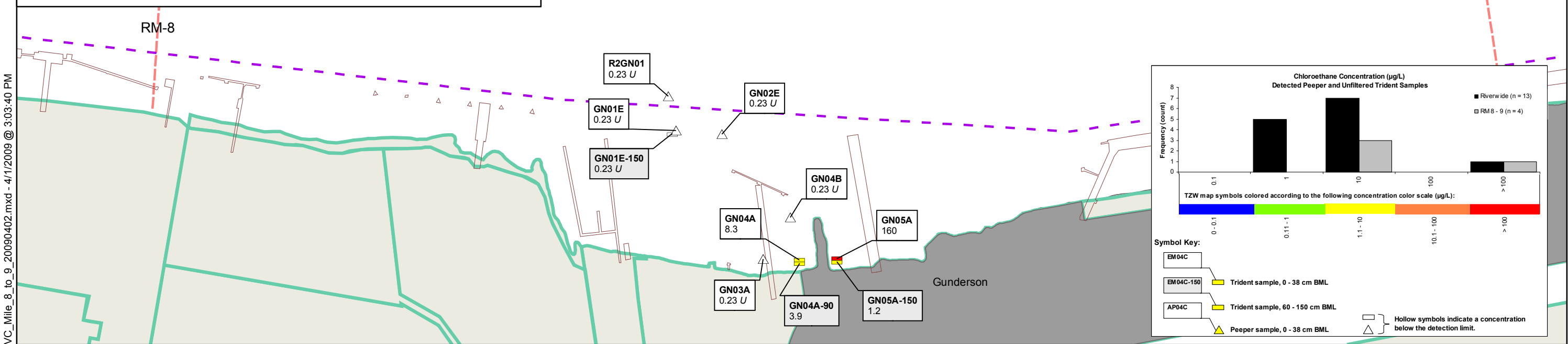
PSt Indicates sample collected during the GWPA Pilot Study by Trident sampler.
PSp Indicates sample collected during the GWPA Pilot Study by small-volume peeper.

Qualifiers:
T Mathematically derived value.
J The associated numerical value was approximated by the analytical laboratory.
U The analyte was not detected above the reported sample quantitation limit.
UJ The analyte was not detected above the reported sample quantitation limit; however,
the reported quantitation limit was approximated by the analytical laboratory.
A Total value based on a limited number of analytes.

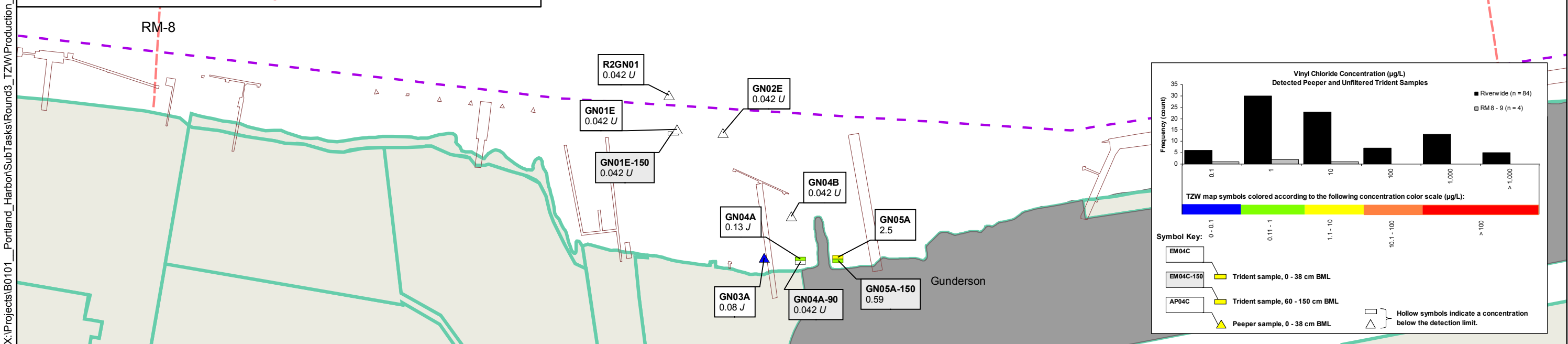


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**Peeper and Unfiltered Trident Samples (all µg/L)
River Mile 08 to 09 - Chloroethane**



**Peeper and Unfiltered Trident Samples (all µg/L)
River Mile 08 to 09 - Vinyl Chloride**



FEATURE SOURCES:
Property and Taxlot Boundaries: Metro RLIS
Channel & River miles: US Army Corps of Engineers.
Docks & In-water Structures: digitized from October
2001 0.33 ft. resolution color orthophotos



Tabular Results Notes:
T Mathematically derived value.
J The associated numerical value was approximated by the analytical laboratory.
U The analyte was not detected above the reported sample quantitation limit.
UJ The analyte was not detected above the reported sample quantitation limit; however,
the reported quantitation limit was approximated by the analytical laboratory.
A Total value based on a limited number of analytes.

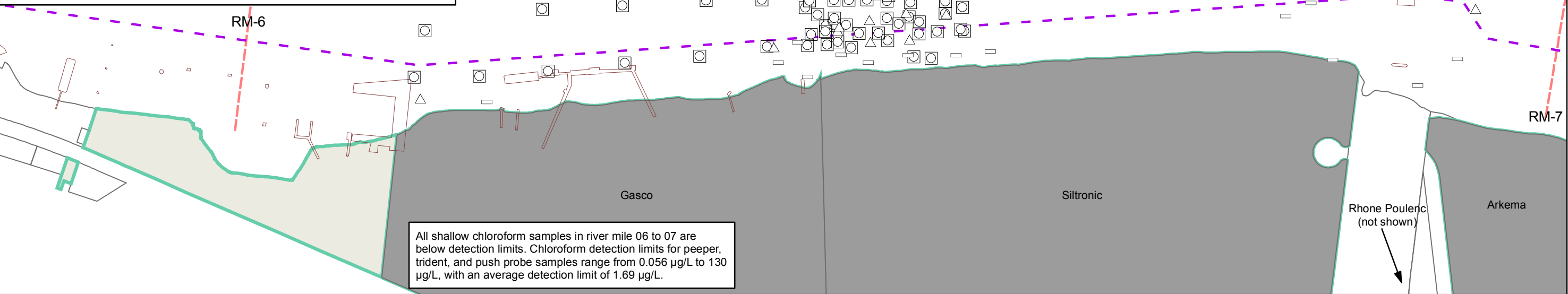
Map Features

- Docks and Structures
- Navigation Channel
- River Miles
- GWPA Study Site
- Upland ECSI Sites (2008)
- Waterfront Taxlots

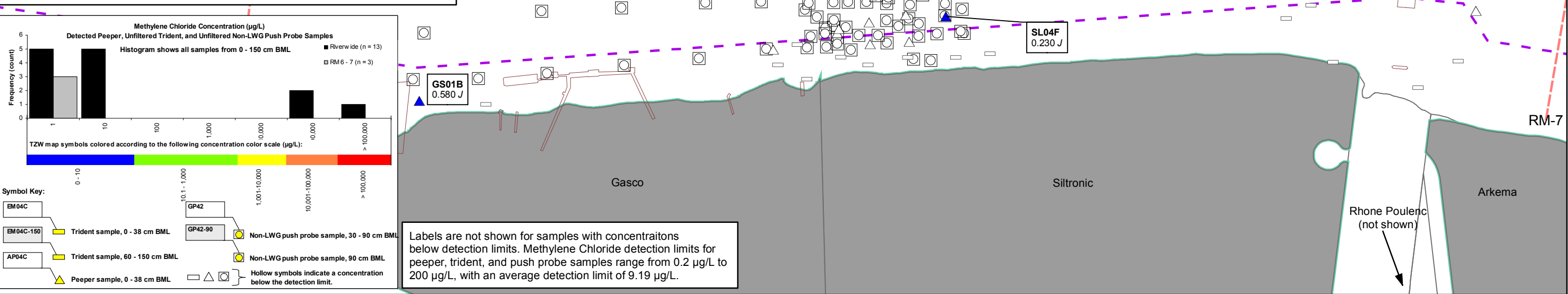
0 250 500 750 1,000 Feet

X:\Projects\0101_Portland_Harbor\SubTasks\Round3_TZW\Production_MXD\TZW_Chloroform_MC_Mile_6_to_7_Shallow_20090820.mxd - 8/20/2009 @ 11:53:40 AM

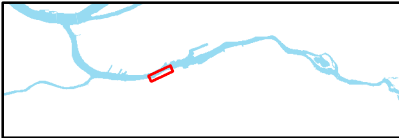
**Peeper, Unfiltered Trident, and Unfiltered Non-LWG Push Probe Samples (all $\mu\text{g/L}$)
River Mile 06 to 07 - Chloroform
Shallow Samples**



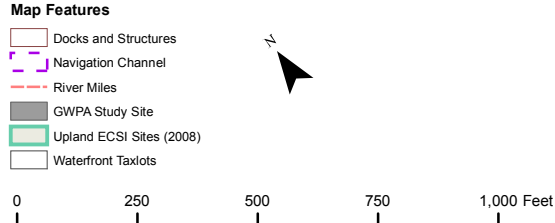
**Peeper, Unfiltered Trident, and Unfiltered Non-LWG Push Probe Samples (all $\mu\text{g/L}$)
River Mile 06 to 07 - Methylene Chloride
Shallow Samples**



FEATURE SOURCES:
Property and Taxlot Boundaries: Metro RLIS
Channel & River miles: US Army Corps of Engineers.
Docks & In-water Structures: digitized from October
2001 0.33 ft. resolution color orthophotos

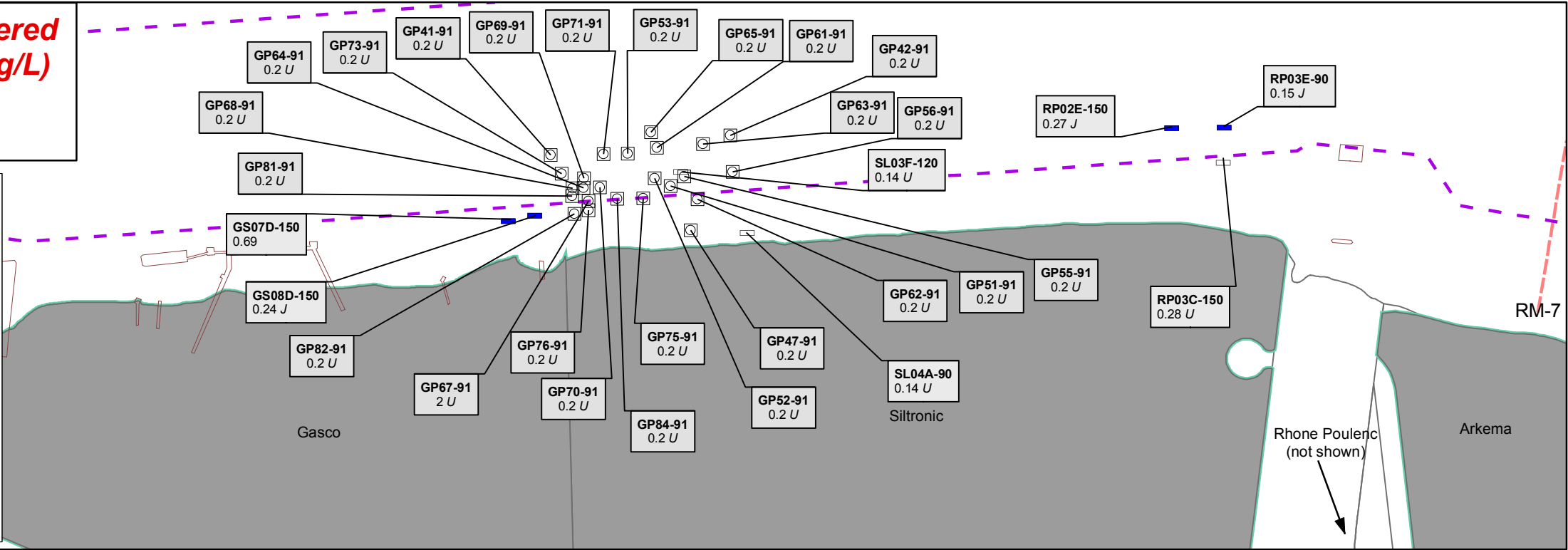
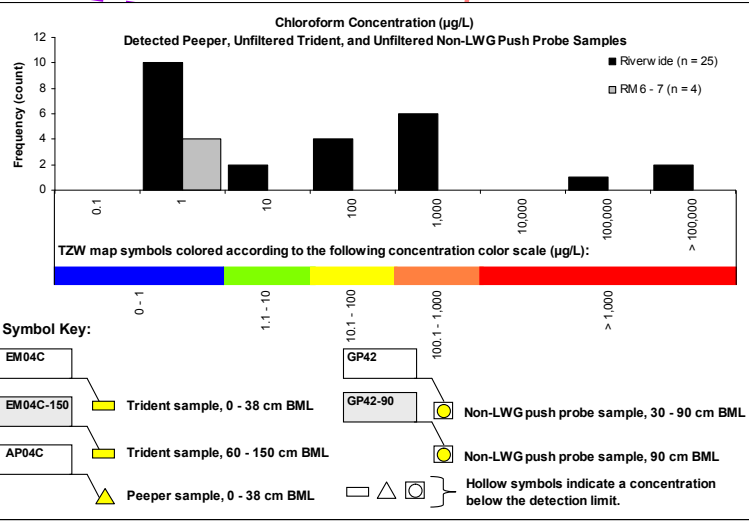


Qualifiers:
T Mathematically derived value.
J The associated numerical value was approximated by the analytical laboratory.
U The analyte was not detected above the reported sample quantitation limit.
UJ The analyte was not detected above the reported sample quantitation limit; however,
the reported quantitation limit was approximated by the analytical laboratory.
A Total value based on a limited number of analytes.

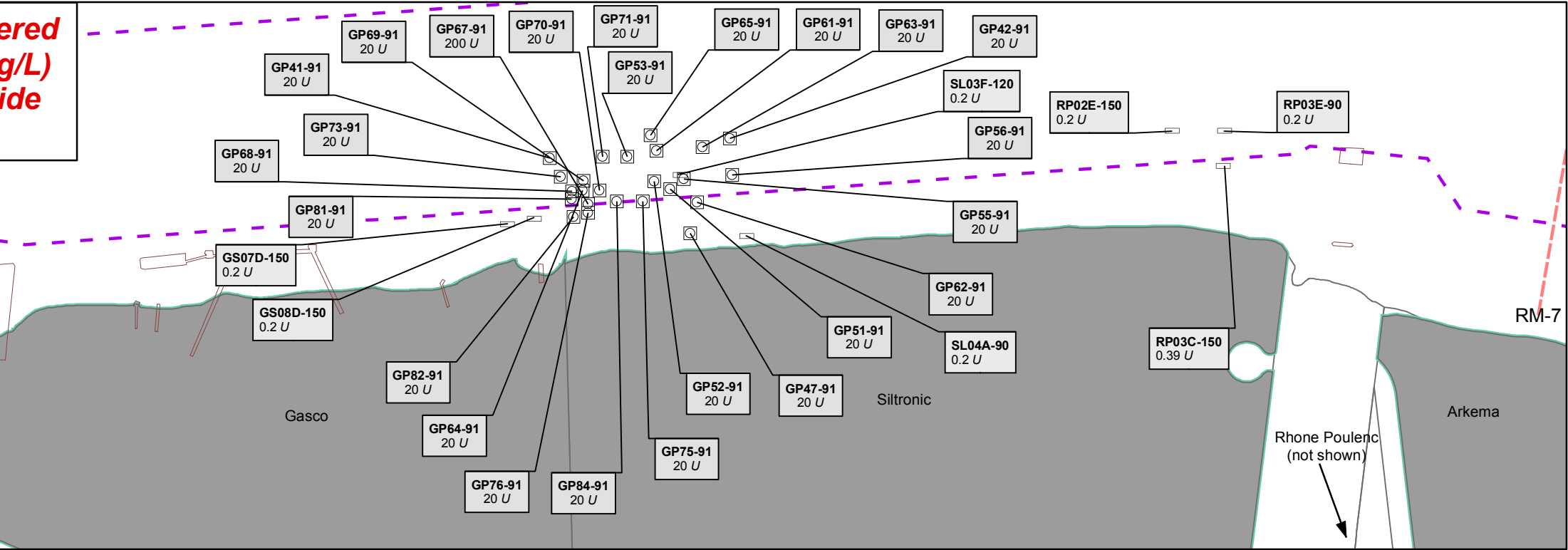
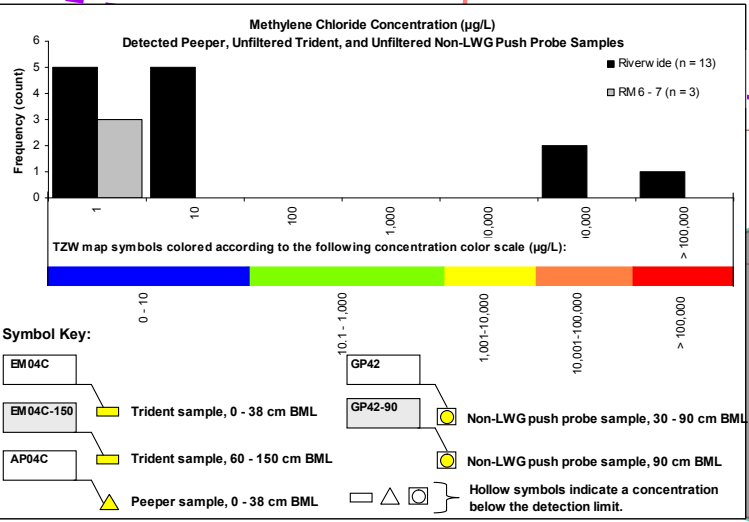


X:\Projects\0101_Portland_Harbor\SubTasks\Round3_TZW\Production_MXD\TZW_Chloroform_MC_Mile_6_to_7_Deep_20090820.mxd - 8/20/2009 @ 12:14:08 PM

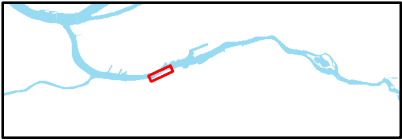
**Peeper, Unfiltered Trident, and Unfiltered Non-LWG Push Probe Samples (all $\mu\text{g/L}$)
River Mile 06 to 07 - Chloroform
Deep Samples**



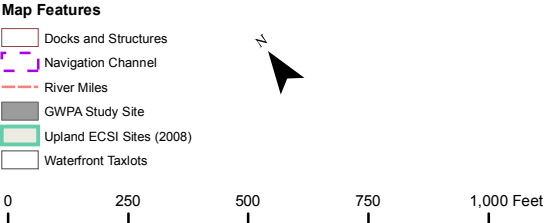
**Peeper, Unfiltered Trident, and Unfiltered Non-LWG Push Probe Samples (all $\mu\text{g/L}$)
River Mile 06 to 07 - Methylene Chloride
Deep Samples**



FEATURE SOURCES:
Property and Taxlot Boundaries: Metro RLIS
Channel & River miles: US Army Corps of Engineers.
Docks & In-water Structures: digitized from October 2001 0.33 ft. resolution color orthophotos



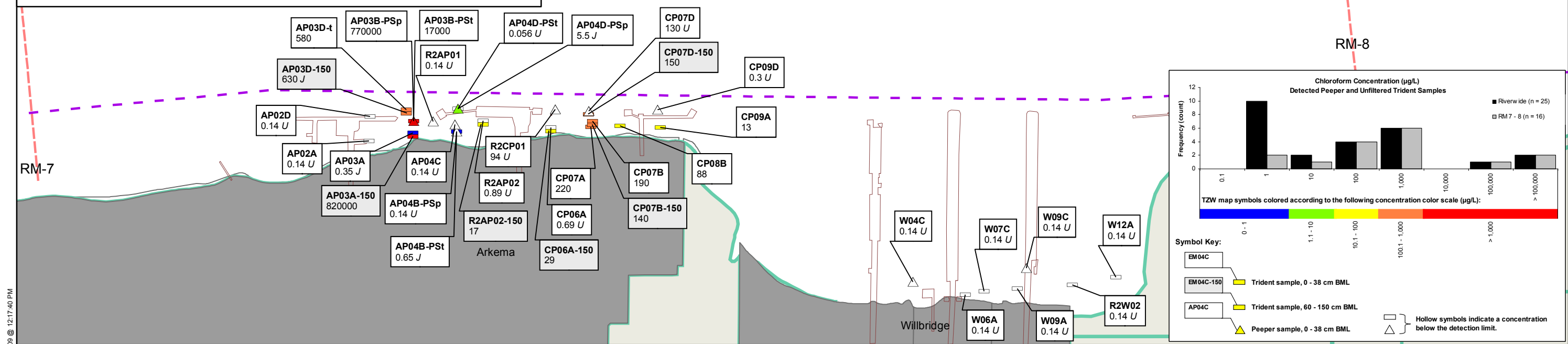
Qualifiers:
T Mathematically derived value.
J The associated numerical value was approximated by the analytical laboratory.
U The analyte was not detected above the reported sample quantitation limit.
UJ The analyte was not detected above the reported sample quantitation limit; however, the reported quantitation limit was approximated by the analytical laboratory.
A Total value based on a limited number of analytes.



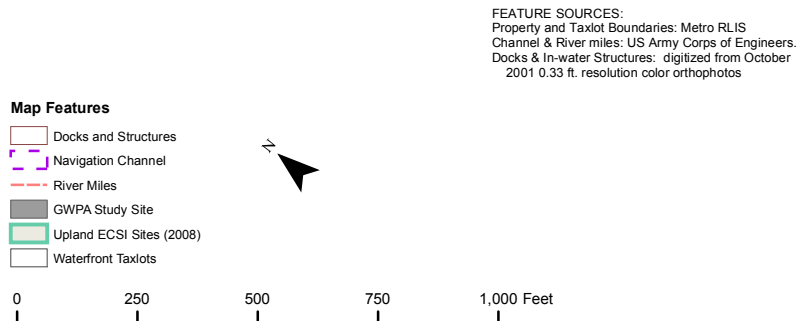
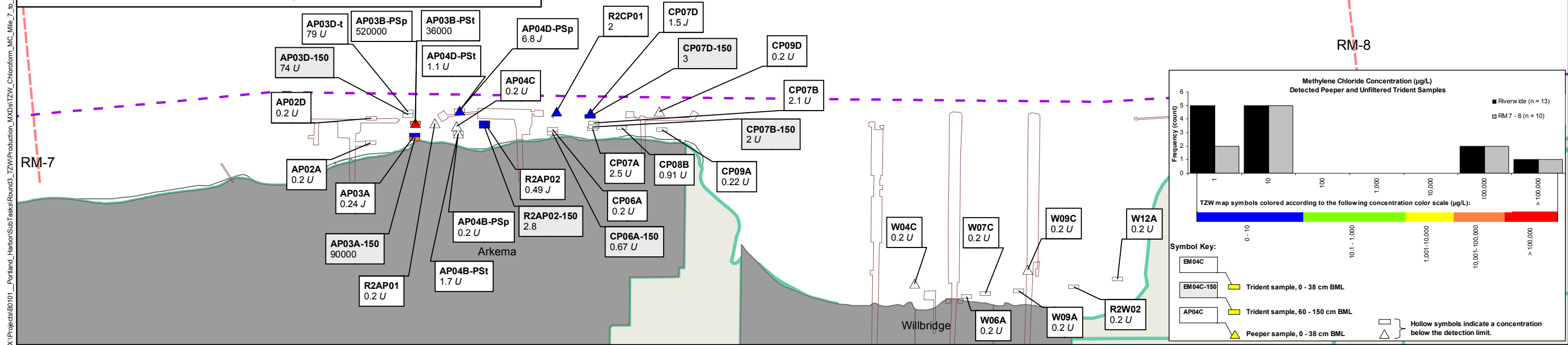
Map D4.2-12b
Portland Harbor RI/FS
Remedial Investigation Report
Transition Zone Water Chemistry
Chloroform ($\mu\text{g/L}$) and Methylene Chloride ($\mu\text{g/L}$)
River Mile 06 to 07, Deep Samples

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**Peeper and Unfiltered Trident Samples (all $\mu\text{g/L}$)
River Mile 07 to 08 - Chloroform**



**Peeper and Unfiltered Trident Samples (all $\mu\text{g/L}$)
River Mile 07 to 08 - Methylene Chloride**



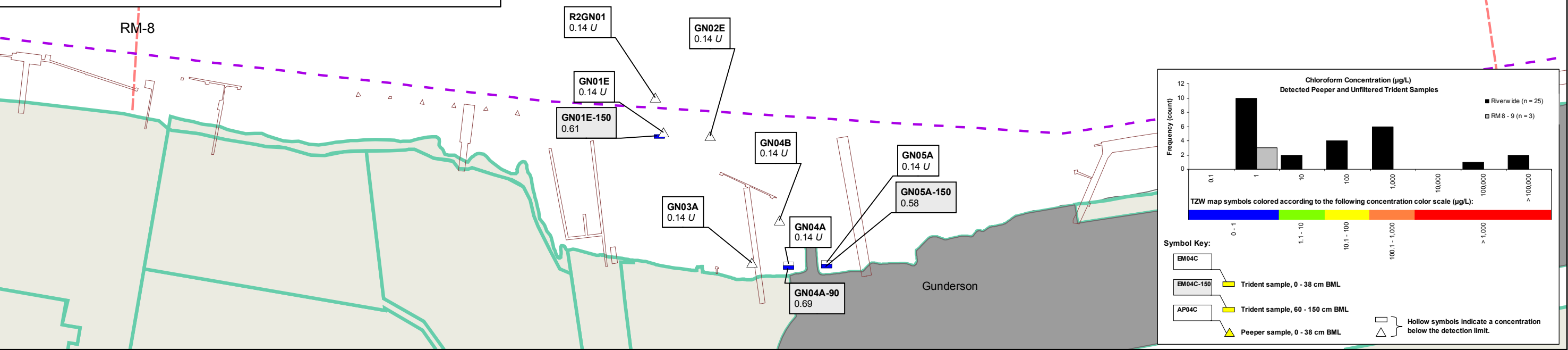
PSt Indicates sample collected during the GWPA Pilot Study by Trident sampler.
PSp Indicates sample collected during the GWPA Pilot Study by small-volume peeper.

Qualifiers:

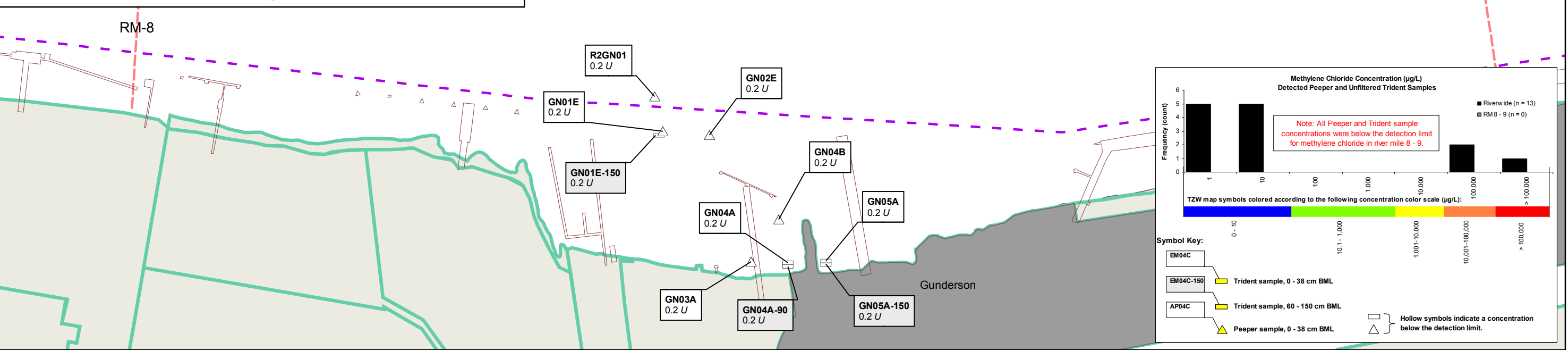
- T Mathematically derived value.
- J The associated numerical value was approximated by the analytical laboratory.
- U The analyte was not detected above the reported sample quantitation limit.
- UJ The analyte was not detected above the reported sample quantitation limit; however, the reported quantitation limit was approximated by the analytical laboratory.
- A Total value based on a limited number of analytes.

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**Peeper & Unfiltered Trident Samples (all µg/L)
River Mile 08 to 09 - Chloroform**



**Peeper and Unfiltered Trident Samples (all µg/L)
River Mile 08 to 09 - Methylene Chloride**



Map Features

- Docks and Structures
- Navigation Channel
- River Miles
- GWPA Study Site
- Upland ECSI Sites (2008)
- Waterfront Taxlots

0 250 500 750 1,000 Feet

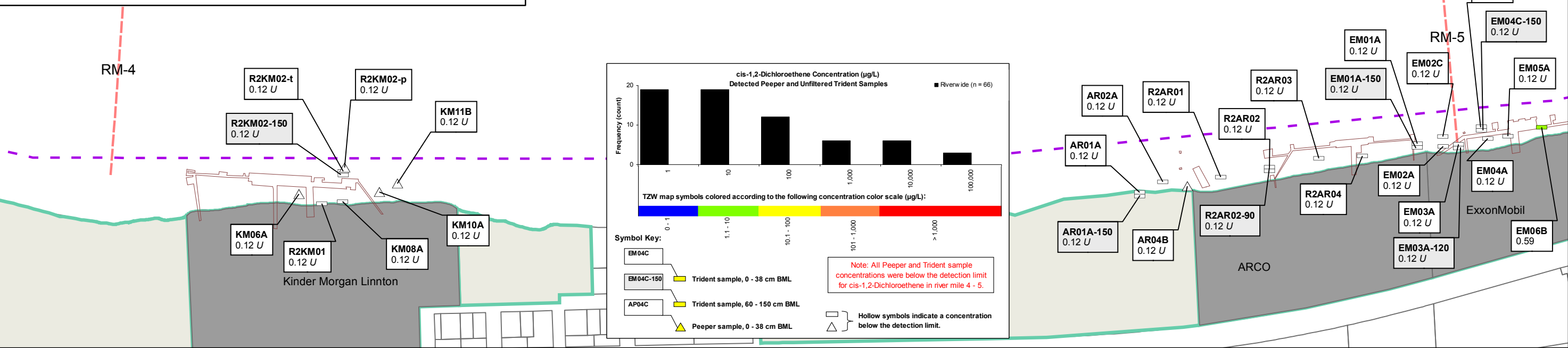
FEATURE SOURCES:
Property and Taxlot Boundaries: Metro RLIS
Channel & River miles: US Army Corps of Engineers.
Docks & In-water Structures: digitized from October
2001 0.33 ft. resolution color orthophotos



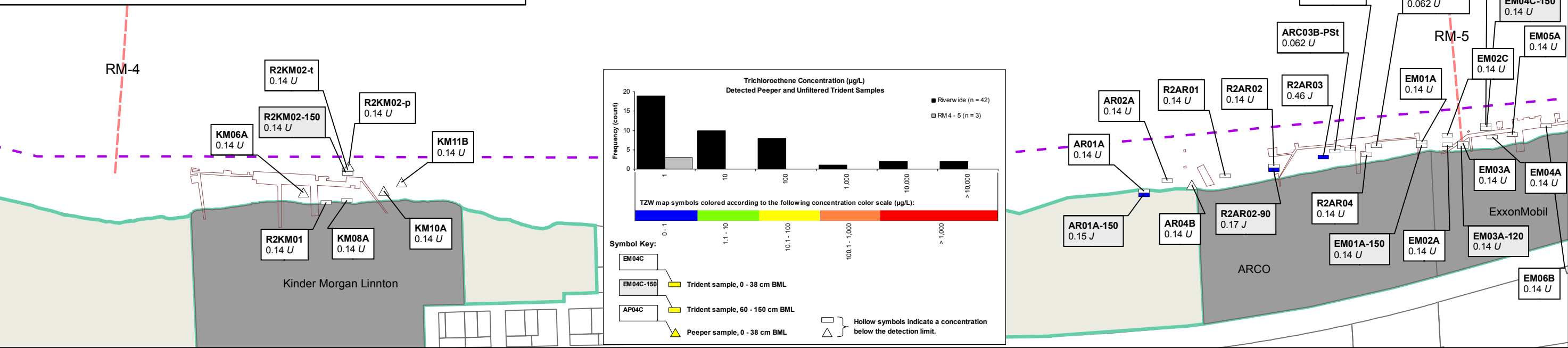
Tabular Results Notes:
T Mathematically derived value.
J The associated numerical value was approximated by the analytical laboratory.
U The analyte was not detected above the reported sample quantitation limit.
UJ The analyte was not detected above the reported sample quantitation limit; however, the reported quantitation limit was approximated by the analytical laboratory.
A Total value based on a limited number of analytes.

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**Peeper and Unfiltered Trident Samples (all $\mu\text{g/L}$)
River Mile 4 to 5 - cis1,2-Dichloroethene**

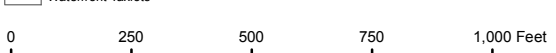


**Peeper and Unfiltered Trident Samples (all $\mu\text{g/L}$)
River Mile 4 to 5 - Trichloroethene**



Map Features

- Docks and Structures
- Navigation Channel
- River Miles
- GWPA Study Site
- Upland Sites ECSI (2008)
- Waterfront Taxlots



FEATURE SOURCES:
Property and Taxlot Boundaries: Metro RLIS
Channel & River miles: US Army Corps of Engineers.
Docks & In-water Structures: digitized from October 2001 0.33 ft. resolution color orthophotos



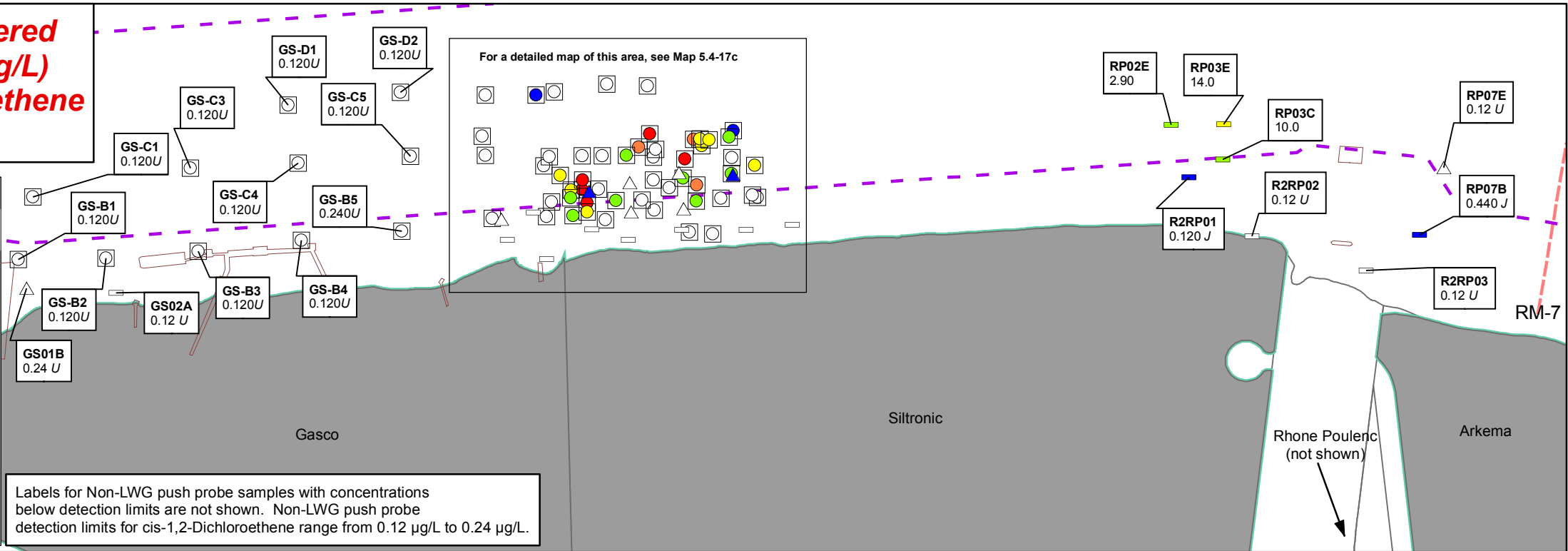
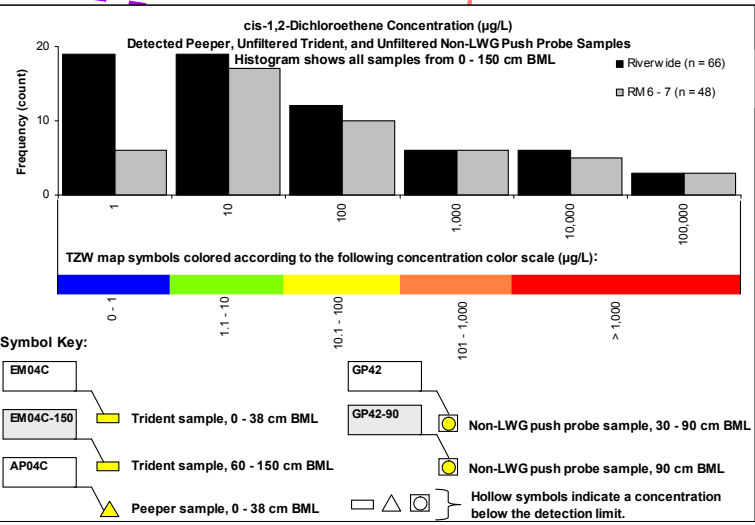
PS Indicates sample collected during the GWPA Pilot Study by Trident sampler.
PSp Indicates sample collected during the GWPA Pilot Study by small-volume peeper.

Qualifiers:
T Mathematically derived value.
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A Total value based on a limited number of analytes.

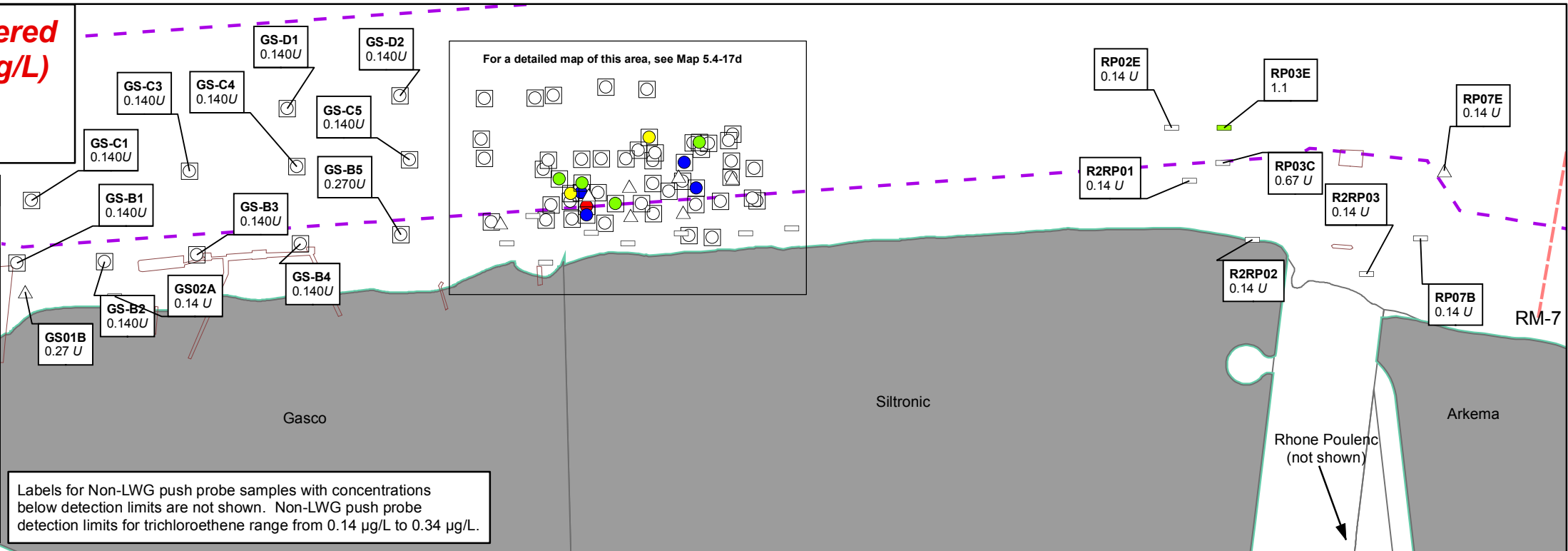
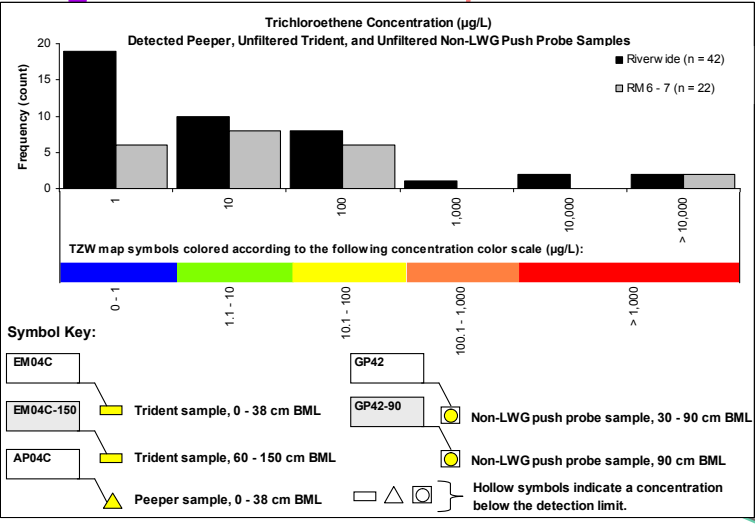
Map D4.2-13a
Portland Harbor RI/FS
Remedial Investigation Report
Concentrations in Transition Zone Water
cis1,2-Dichloroethene ($\mu\text{g/L}$) and Trichloroethene
River Mile 04 to 05

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**Peeper, Unfiltered Trident, and Unfiltered Non-LWG Push Probe Samples (all $\mu\text{g/L}$)
River Mile 06 to 07 - cis-1,2-Dichloroethene Shallow Samples**



**Peeper, Unfiltered Trident, and Unfiltered Non-LWG Push Probe Samples (all $\mu\text{g/L}$)
River Mile 06 to 07 - Trichloroethene Shallow Samples**



Map Features

- Docks and Structures
- Navigation Channel
- River Miles
- GWPA Study Site
- Upland ECSI Sites (2008)
- Waterfront Taxlots

0 250 500 750 1,000 Feet

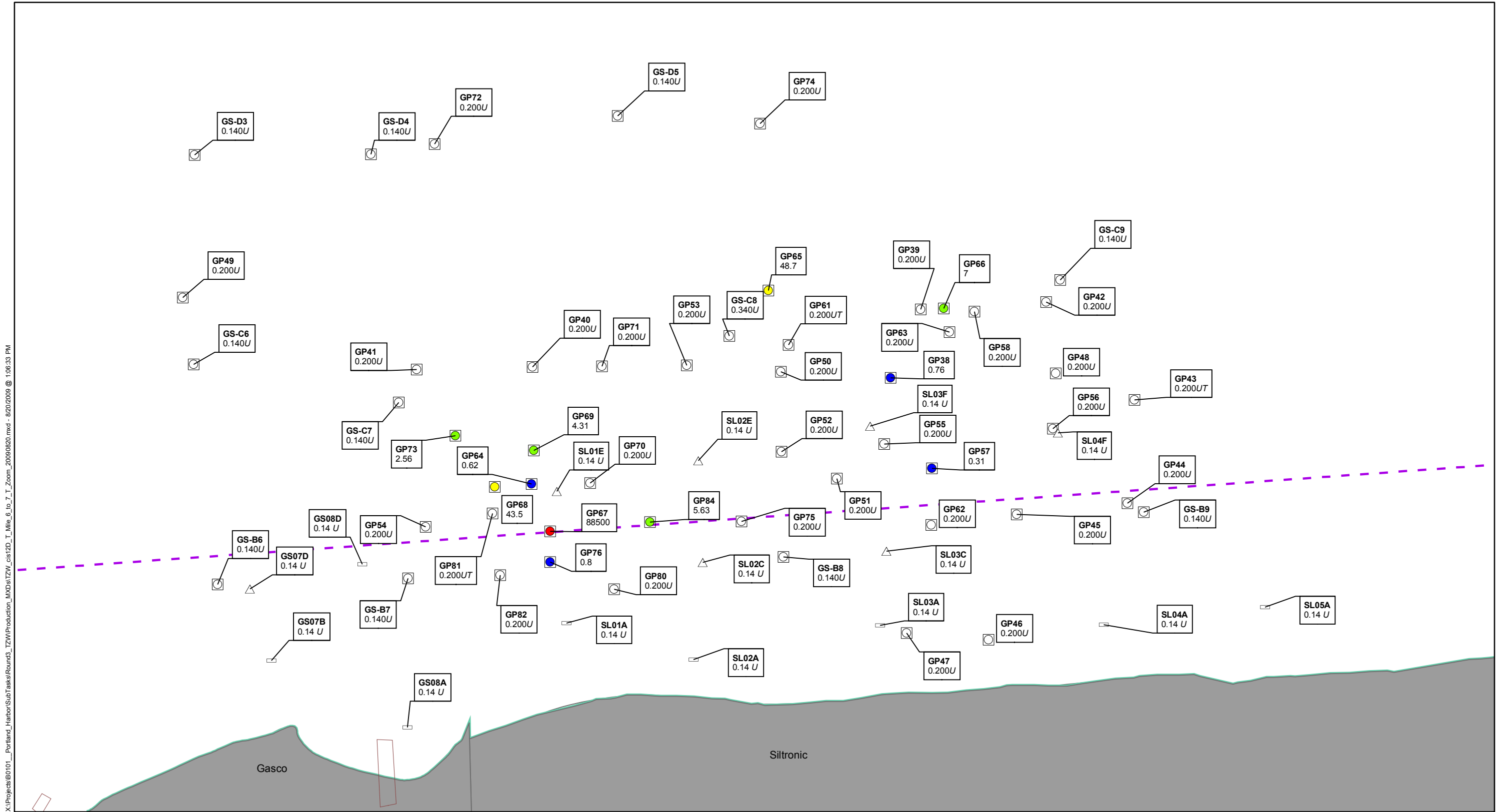
FEATURE SOURCES:
Property and Taxlot Boundaries: Metro RLIS
Channel & River miles: US Army Corps of Engineers.
Docks & In-water Structures: digitized from October 2001 0.33 ft. resolution color orthophotos



Qualifiers:

- T Mathematically derived value.
- J The associated numerical value was approximated by the analytical laboratory.
- U The analyte was not detected above the reported sample quantitation limit.
- UJ The analyte was not detected above the reported sample quantitation limit; however, the reported quantitation limit was approximated by the analytical laboratory.
- A Total value based on a limited number of analytes.

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FEATURE SOURCES:
Property and Taxlot Boundaries: Metro RLIS
Channel & River miles: US Army Corps of Engineers.
Docks & In-water Structures: digitized from October
2001 0.33 ft. resolution color orthophotos



Qualifiers:
T Mathematically derived value.
J The associated numerical value was approximated by the analytical laboratory.
U The analyte was not detected above the reported sample quantitation limit.
UJ The analyte was not detected above the reported sample quantitation limit; however,
the reported quantitation limit was approximated by the analytical laboratory.
A Total value based on a limited number of analytes.

Map Features

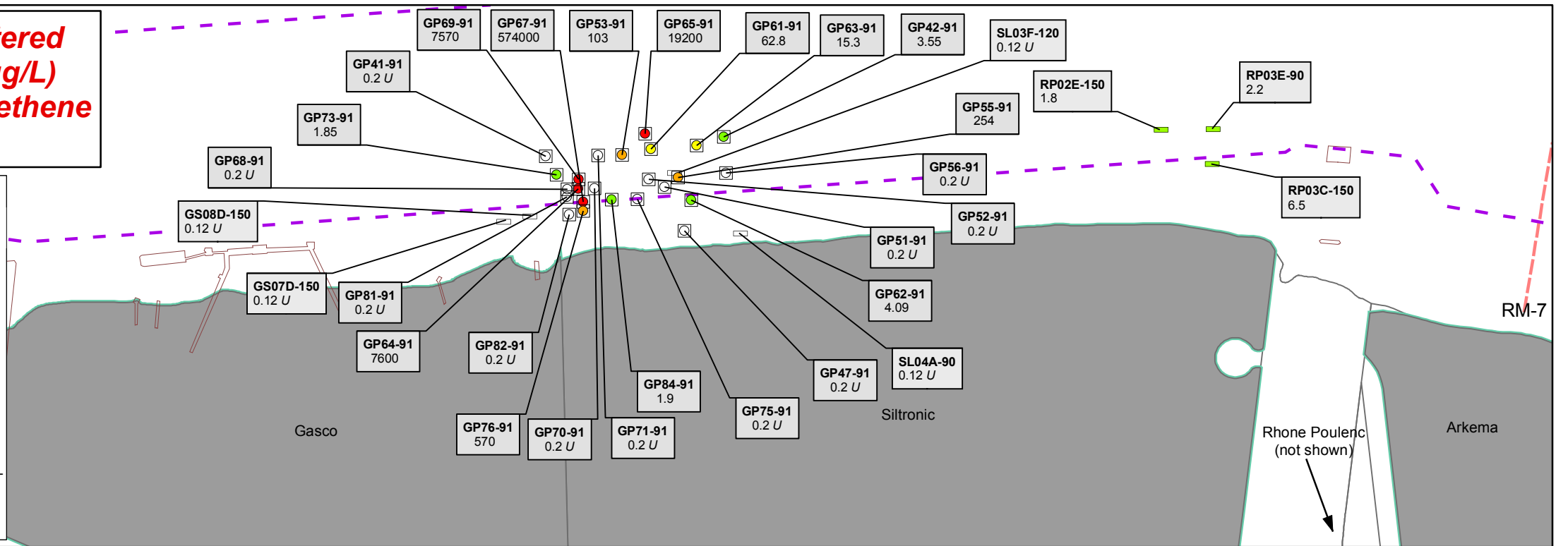
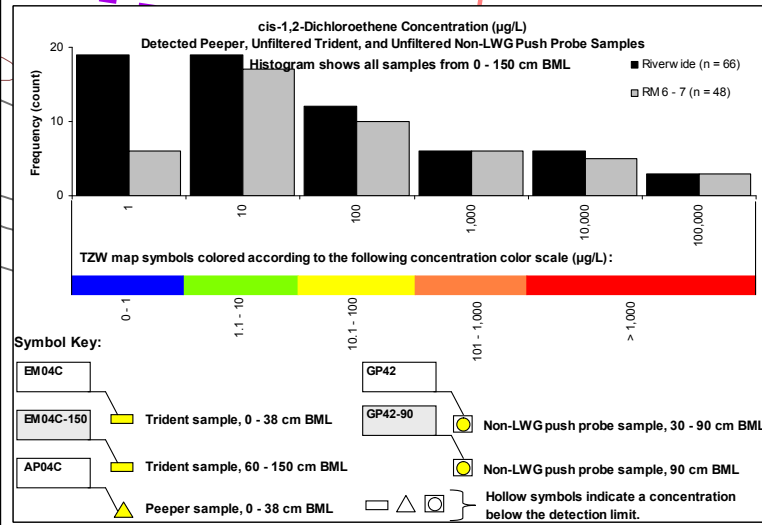
- Docks and Structures
- Navigation Channel
- River Miles
- GWPA Study Site
- Upland ECSI Sites (2008)
- Waterfront Taxlots

0 70 140 210 280 Feet

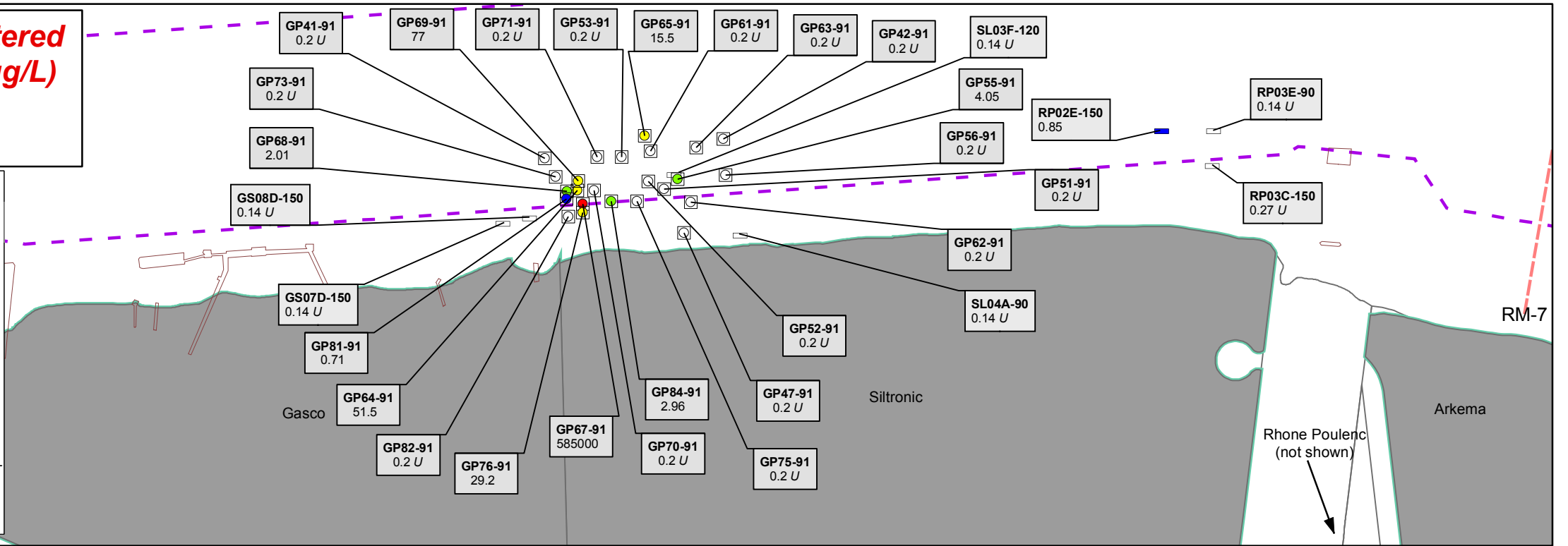
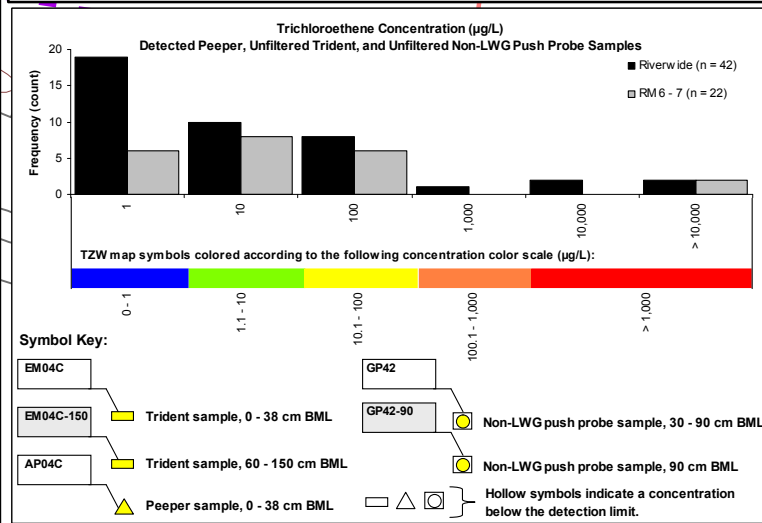
Map D4.2-13c
Portland Harbor RI/FS
Remedial Investigation Report
Transition Zone Water Chemistry
Trichloroethene (µg/L)
River Mile 06 to 07, Shallow Zoom

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Peeper, Unfiltered Trident, and Unfiltered Non-LWG Push Probe Samples (all $\mu\text{g/L}$) River Mile 06 to 07 - cis-1,2-Dichloroethene Deep Samples



Peeper, Unfiltered Trident, and Unfiltered Non-LWG Push Probe Samples (all $\mu\text{g/L}$) River Mile 06 to 07 - Trichloroethene Deep Samples

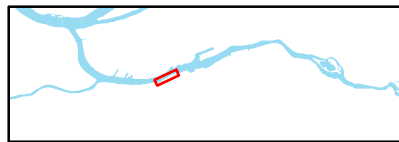


Map Features

- Docks and Structures
- Navigation Channel
- River Miles
- GWPA Study Site
- Upland ECSI Sites (2008)
- Waterfront Taxlots

0 250 500 750 1,000 Feet

FEATURE SOURCES:
Property and Taxlot Boundaries: Metro RLIS
Channel & River miles: US Army Corps of Engineers.
Docks & In-water Structures: digitized from October 2001 0.33 ft. resolution color orthophotos

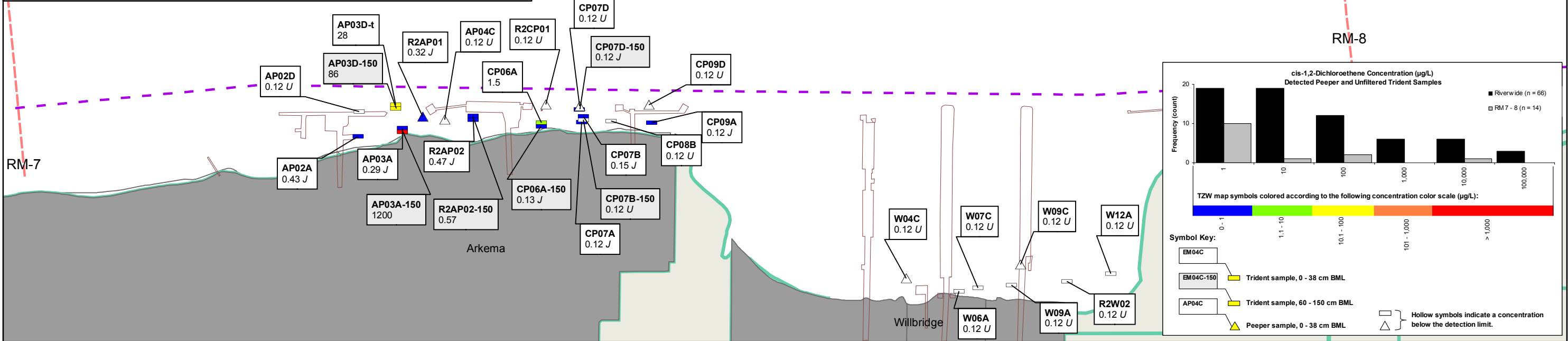


Qualifiers:

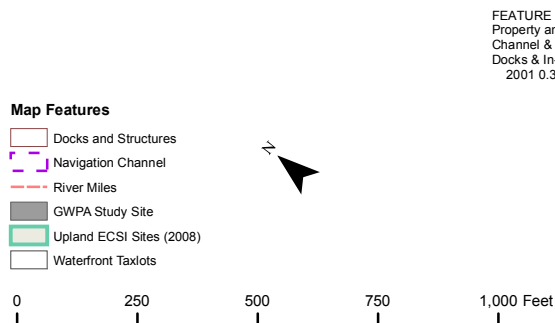
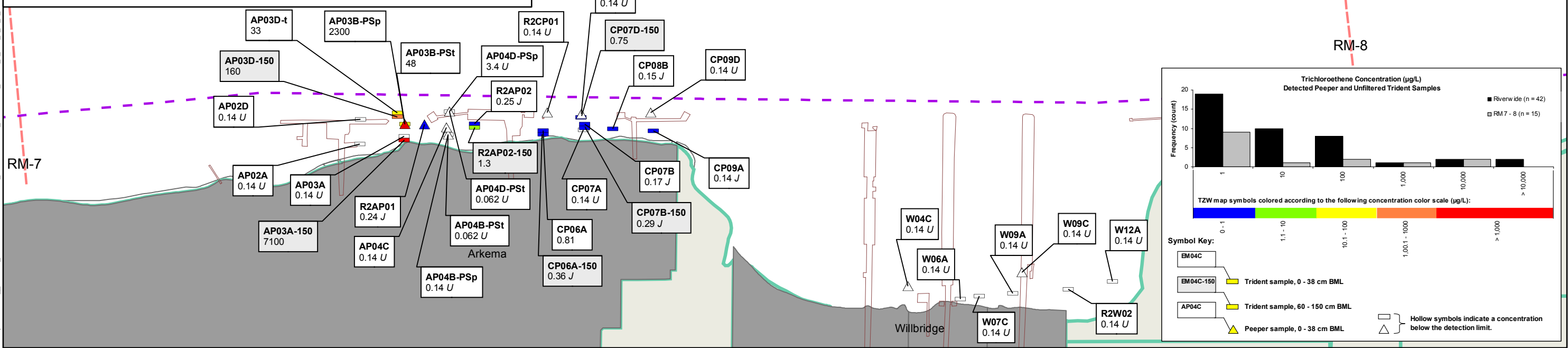
- T: Mathematically derived value.
- J: The associated numerical value was approximated by the analytical laboratory.
- U: The analyte was not detected above the reported sample quantitation limit.
- UJ: The analyte was not detected above the reported sample quantitation limit; however, the reported quantitation limit was approximated by the analytical laboratory.
- A: Total value based on a limited number of analytes.

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**Peeper and Unfiltered Trident Samples (all µg/L)
River Mile 07 to 08 - cis-1,2-Dichloroethene**



**Peeper and Unfiltered Trident Samples (all µg/L)
River Mile 07 to 08 - Trichloroethene**

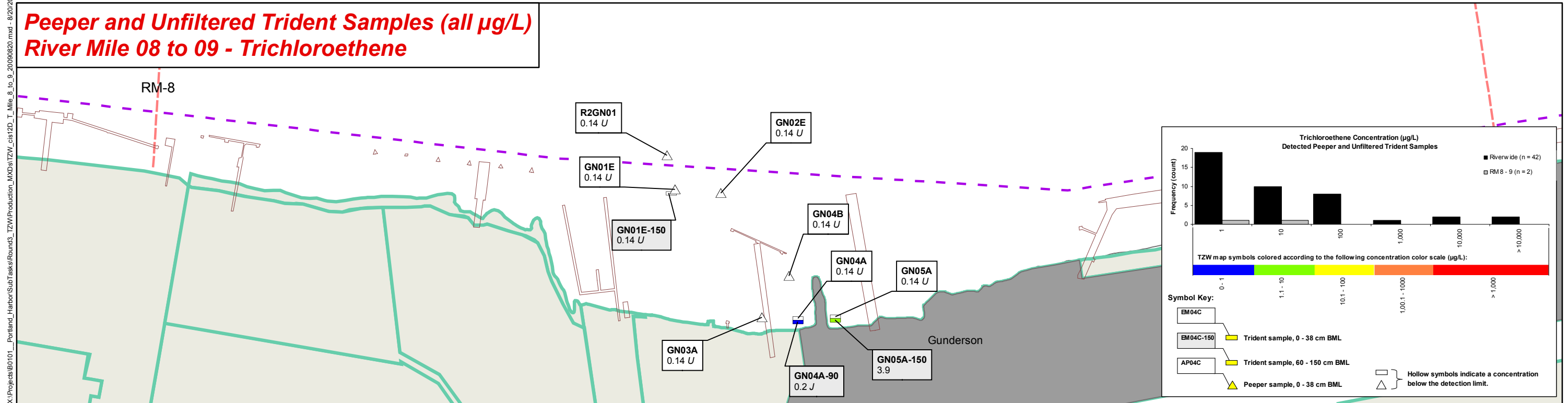
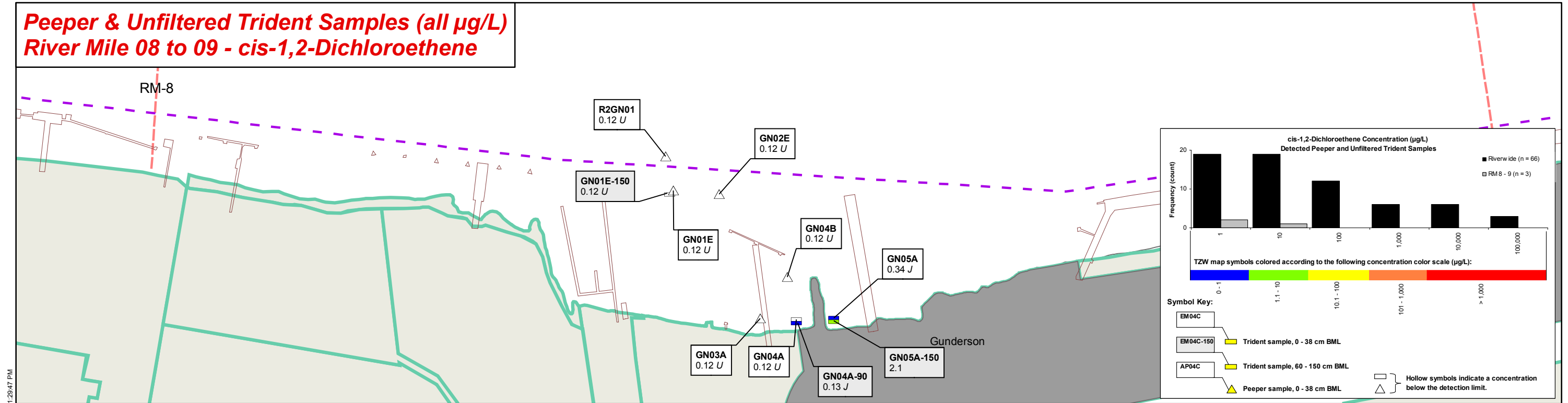


FEATURE SOURCES:
Property and Taxlot Boundaries: Metro RLIS
Channel & River miles: US Army Corps of Engineers.
Docks & In-water Structures: digitized from October 2001 0.33 ft. resolution color orthophotos

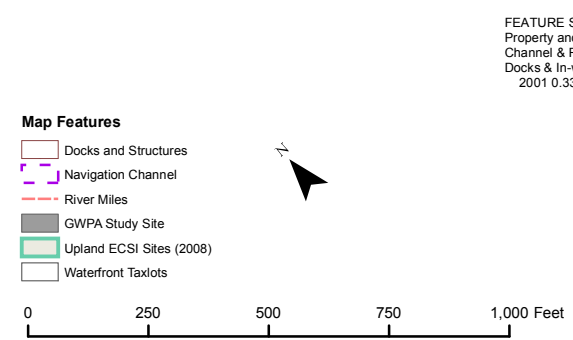


PSt Indicates sample collected during the GWPA Pilot Study by Trident sampler.
PSP Indicates sample collected during the GWPA Pilot Study by small-volume peeper.

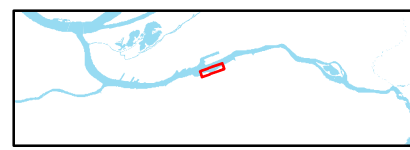
Qualifiers:
T Mathematically derived value.
J The associated numerical value was approximated by the analytical laboratory.
U The analyte was not detected above the reported sample quantitation limit.
UJ The analyte was not detected above the reported sample quantitation limit; however, the reported quantitation limit was approximated by the analytical laboratory.
A Total value based on a limited number of analytes.



X:\Projects\B0101_Portland_Harbor\SubTasks\Round3_TZW\Production_MXD\TZW_cis2D_T_Mile_8_to_9_20090820.mxd - 8/20/2009 @ 1:29:47 PM



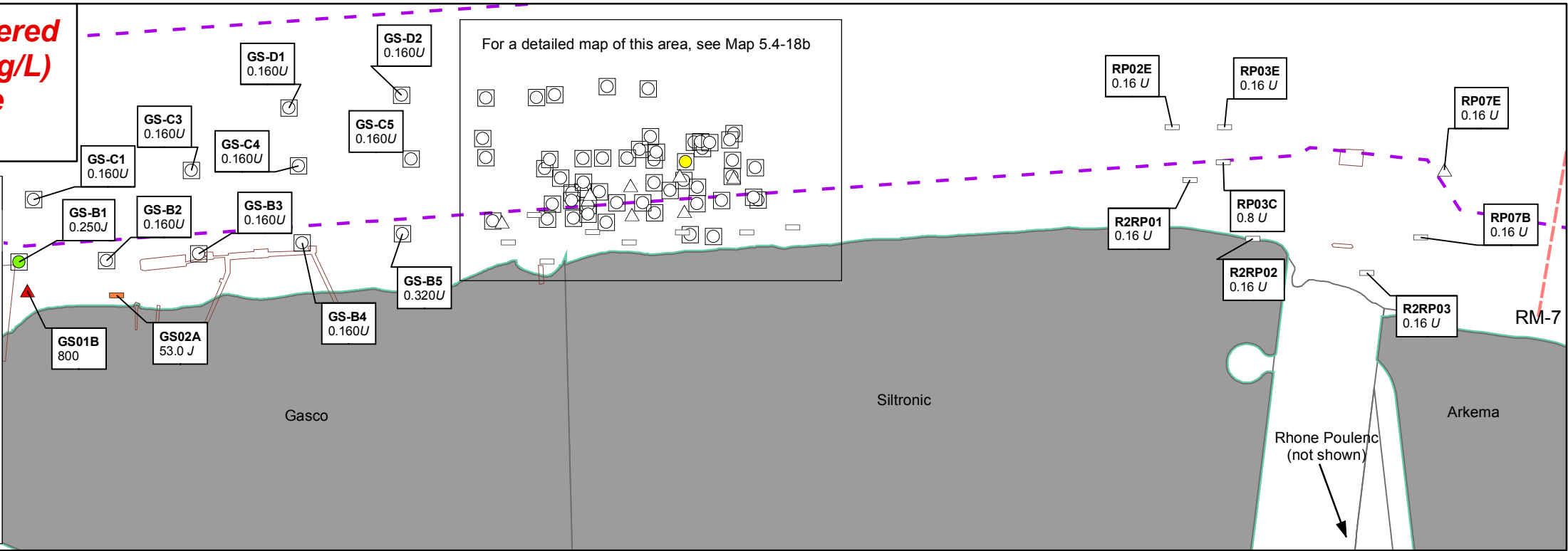
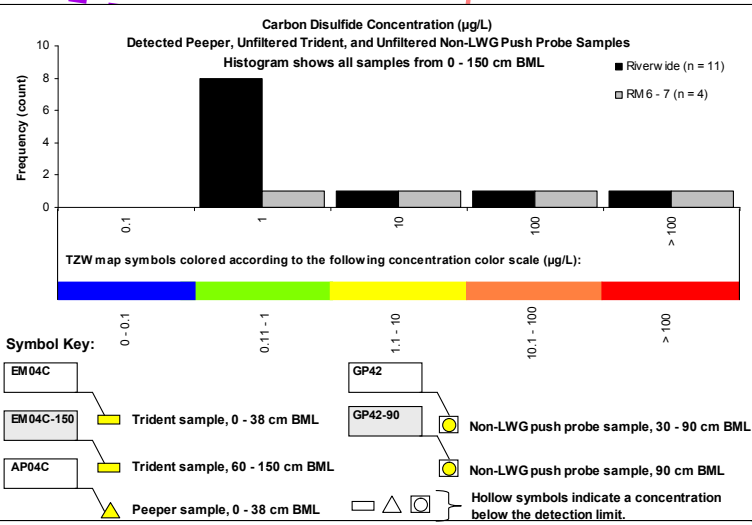
FEATURE SOURCES:
Property and Taxlot Boundaries: Metro RLIS
Channel & River miles: US Army Corps of Engineers.
Docks & In-water Structures: digitized from October
2001 0.33 ft. resolution color orthophotos



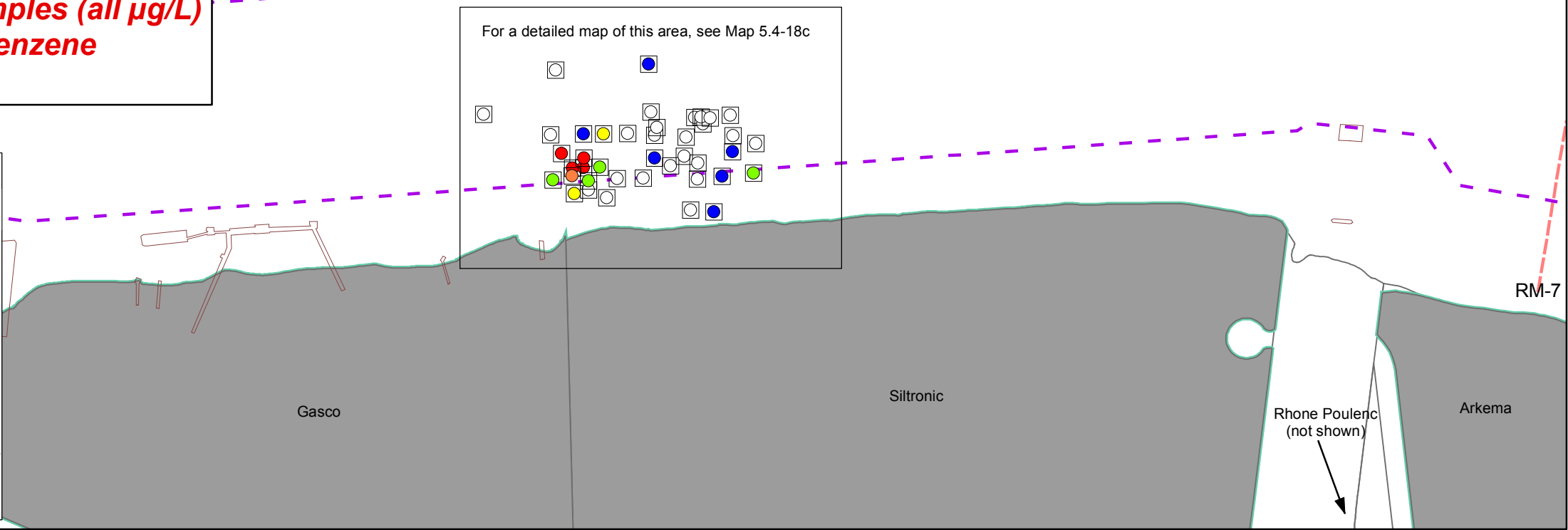
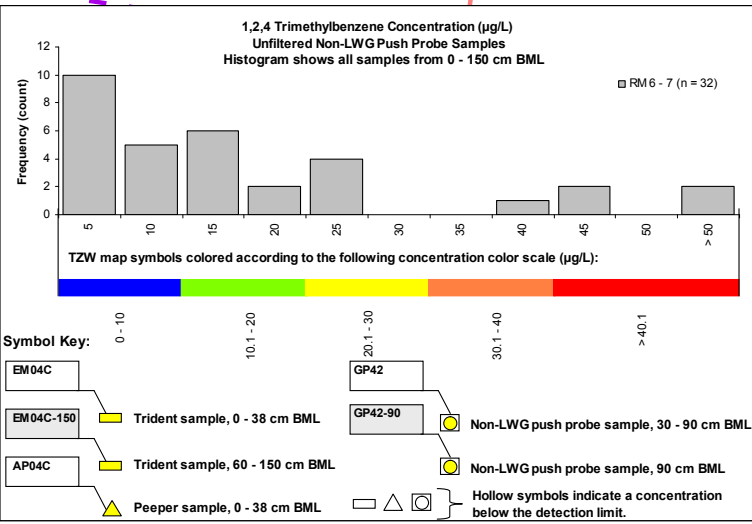
Qualifiers:

- T Mathematically derived value.
- J The associated numerical value was approximated by the analytical laboratory.
- U The analyte was not detected above the reported sample quantitation limit.
- UJ The analyte was not detected above the reported sample quantitation limit; however, the reported quantitation limit was approximated by the analytical laboratory.
- A Total value based on a limited number of analytes.

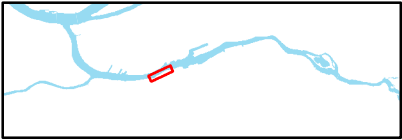
**Peeper, Unfiltered Trident, and Unfiltered Non-LWG Push Probe Samples (all $\mu\text{g/L}$)
River Mile 06 to 07 - Carbon Disulfide
Shallow Samples**



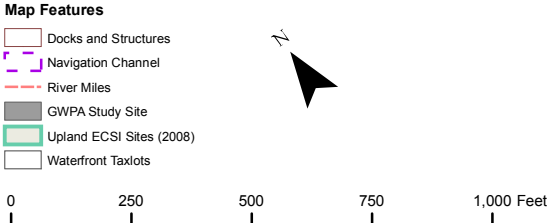
**Unfiltered Non-LWG Push Probe Samples (all $\mu\text{g/L}$)
River Mile 06 to 07 - 1,2,4-Trimethylbenzene
Shallow Samples**



FEATURE SOURCES:
Property and Taxlot Boundaries: Metro RLIS
Channel & River miles: US Army Corps of Engineers.
Docks & In-water Structures: digitized from October 2001 0.33 ft. resolution color orthophotos

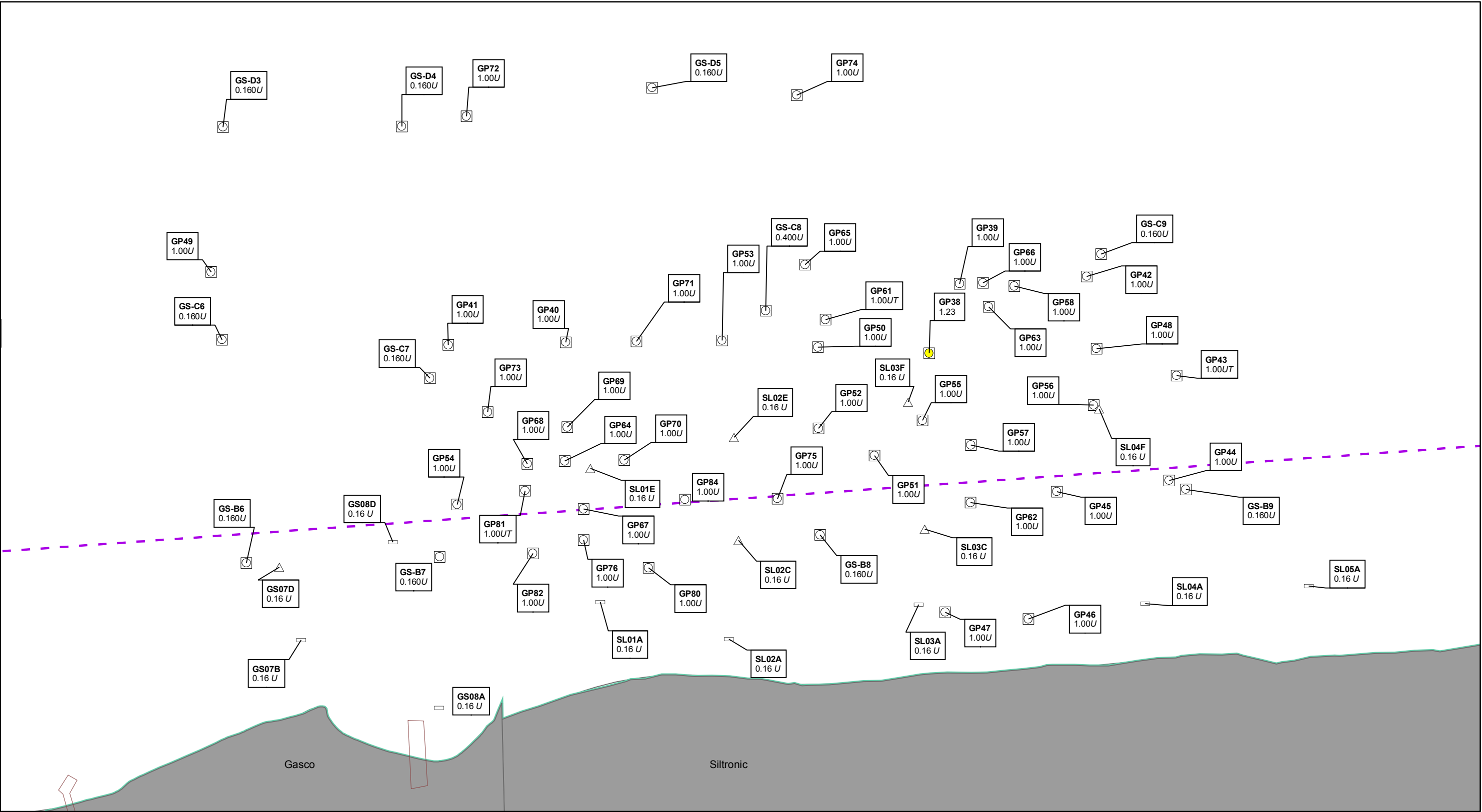


Qualifiers:
T Mathematically derived value.
J The associated numerical value was approximated by the analytical laboratory.
U The analyte was not detected above the reported sample quantitation limit.
UJ The analyte was not detected above the reported sample quantitation limit; however, the reported quantitation limit was approximated by the analytical laboratory.
A Total value based on a limited number of analytes.



Map D4.2-14a
Portland Harbor RI/FS
Remedial Investigation Report
Transition Zone Water Chemistry
Carbon Disulfide ($\mu\text{g/L}$) and 1,2,4-Trimethylbenzene ($\mu\text{g/L}$)
River Mile 06 to 07, Shallow Samples

X:\Projects\B0101_Portland_Harbor\SubTasks\Round3_TZW\Production_MXD\TZW_124TMB_CD_Mile_6_to_7_CD_Zoom_20090402.mxd - 4/2/2009 @ 9:11:40 AM



FEATURE SOURCES:
Property and Taxlot Boundaries: Metro RLIS
Channel & River miles: US Army Corps of Engineers.
Docks & In-water Structures: digitized from October 2001 0.33 ft. resolution color orthophotos



Qualifiers:
T Mathematically derived value.
J The associated numerical value was approximated by the analytical laboratory.
U The analyte was not detected above the reported sample quantitation limit.
UJ The analyte was not detected above the reported sample quantitation limit; however, the reported quantitation limit was approximated by the analytical laboratory.
A Total value based on a limited number of analytes.

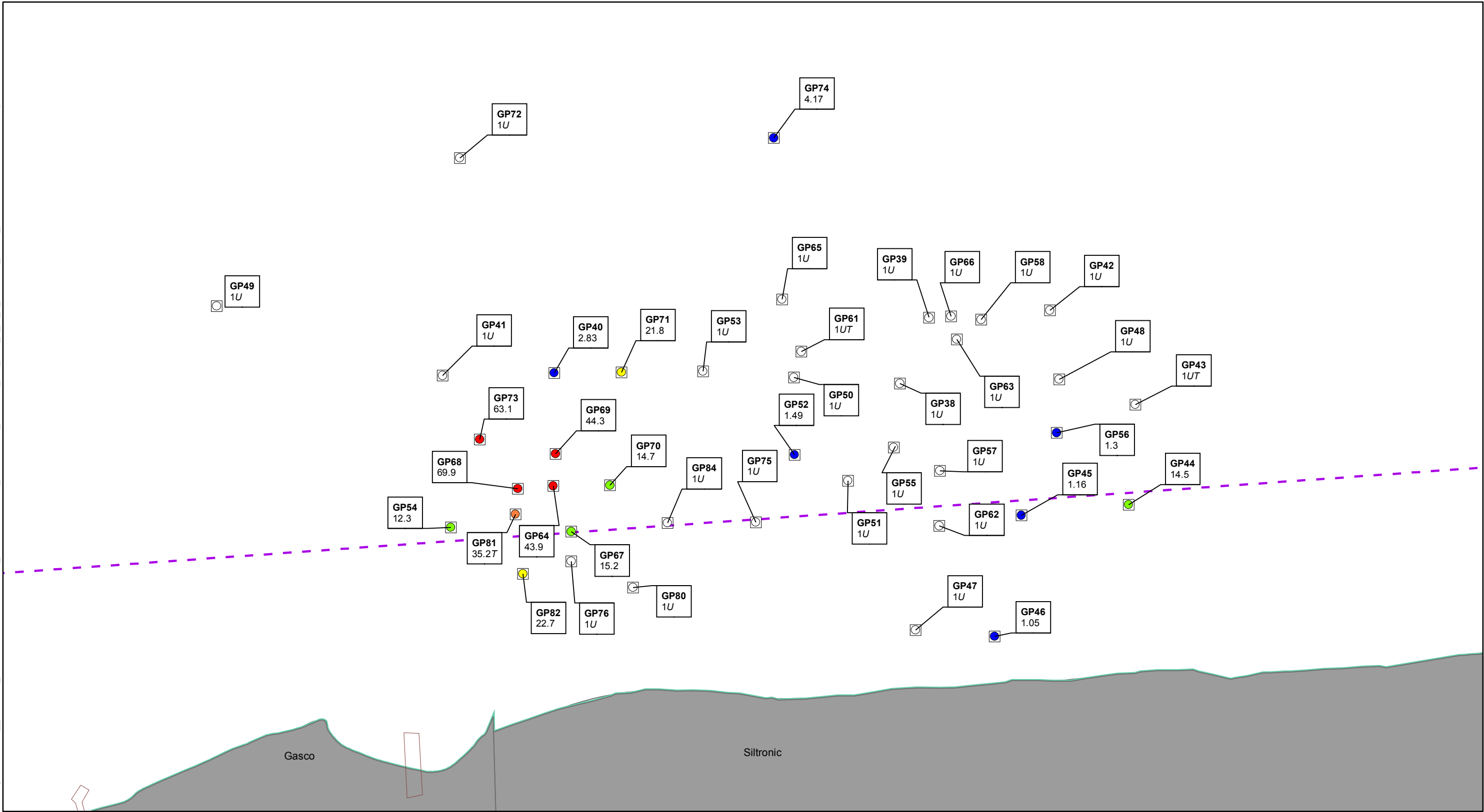
Map Features

- Docks and Structures
- Navigation Channel
- River Miles
- GWPA Study Site
- Upland ECSI Sites (2008)
- Waterfront Taxlots

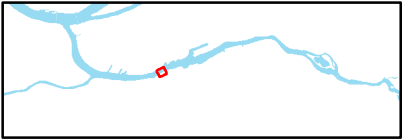
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Map D4.2-14b
Portland Harbor RI/FS
Remedial Investigation Report
Transition Zone Water Chemistry
Carbon Disulfide (µg/L)
River Mile 06 to 07, Shallow Zoom

X:\Projects\B0101__Portland_Harbor\SubTasks\Round3_TZW\Production_MXD\slTZW_124TMB_CD_Mile_6_to_7_124TMB_Zoom_20090402.mxd - 4/2/2009 @ 9:15:38 AM



FEATURE SOURCES:
Property and Taxlot Boundaries: Metro RLIS
Channel & River miles: US Army Corps of Engineers.
Docks & In-water Structures: digitized from October
2001 0.33 ft. resolution color orthophotos



Qualifiers:
T Mathematically derived value.
J The associated numerical value was approximated by the analytical laboratory.
U The analyte was not detected above the reported sample quantitation limit.
UJ The analyte was not detected above the reported sample quantitation limit; however,
the reported quantitation limit was approximated by the analytical laboratory.
A Total value based on a limited number of analytes.

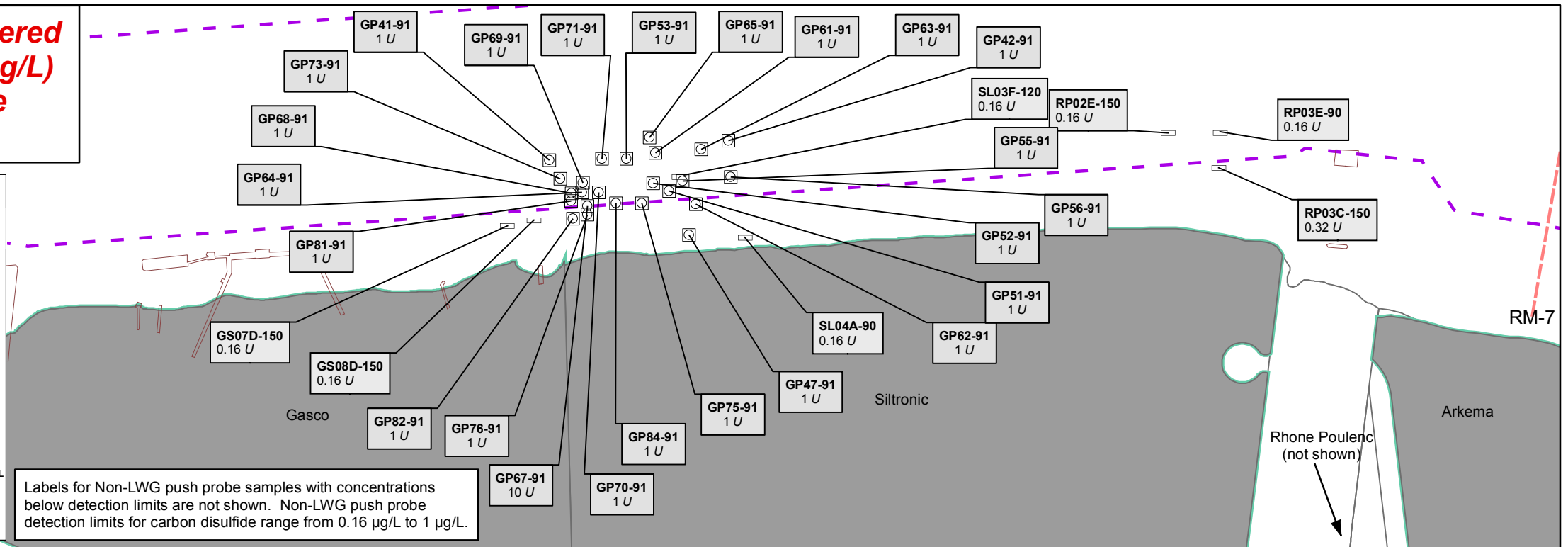
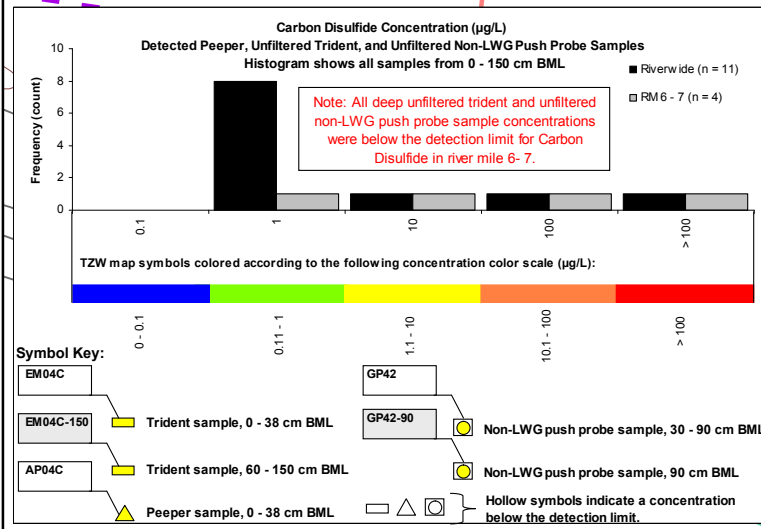
Map Features

- Docks and Structures
- Navigation Channel
- River Miles
- GWPA Study Site
- Upland ECSI Sites (2008)
- Waterfront Taxlots

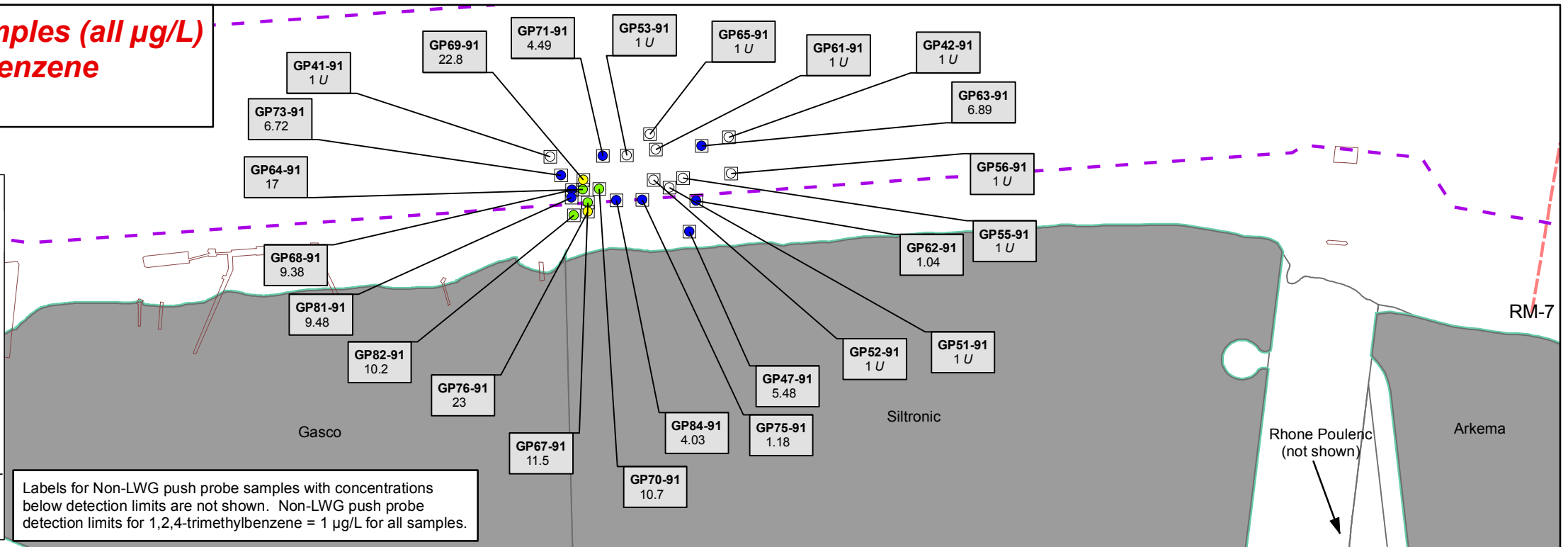
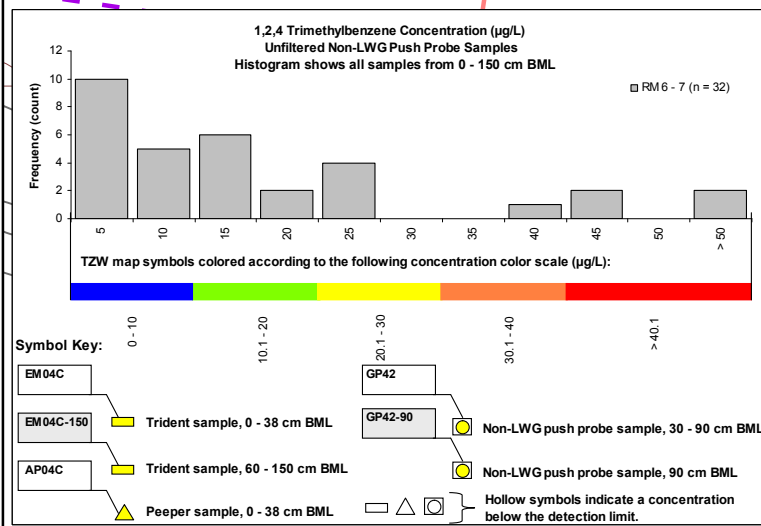
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Map D4.2-14c
Portland Harbor RI/FS
Remedial Investigation Report
Transition Zone Water Chemistry
1,2,4-Trimethylbenzene (µg/L)
River Mile 06 to 07, Shallow Zoom

**Peeper, Unfiltered Trident, and Unfiltered Non-LWG Push Probe Samples (all $\mu\text{g/L}$)
River Mile 06 to 07 - Carbon Disulfide
Deep Samples**



**Unfiltered Non-LWG Push Probe Samples (all $\mu\text{g/L}$)
River Mile 06 to 07 - 1,2,4-Trimethylbenzene
Deep Samples**



FEATURE SOURCES:
Property and Taxlot Boundaries: Metro RLIS
Channel & River miles: US Army Corps of Engineers.
Docks & In-water Structures: digitized from October 2001 0.33 ft. resolution color orthophotos



Qualifiers:
T Mathematically derived value.
J The associated numerical value was approximated by the analytical laboratory.
U The analyte was not detected above the reported sample quantitation limit.
UJ The analyte was not detected above the reported sample quantitation limit; however, the reported quantitation limit was approximated by the analytical laboratory.
A Total value based on a limited number of analytes.

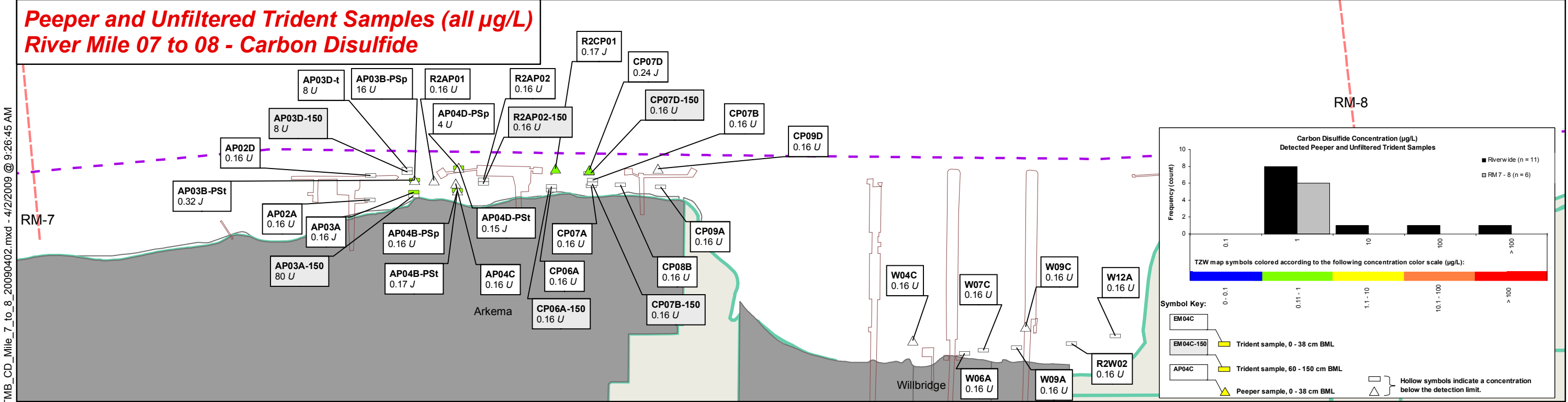
Map Features

- Docks and Structures
- Navigation Channel
- River Miles
- GWPA Study Site
- Upland ECSI Sites (2008)
- Waterfront Taxlots

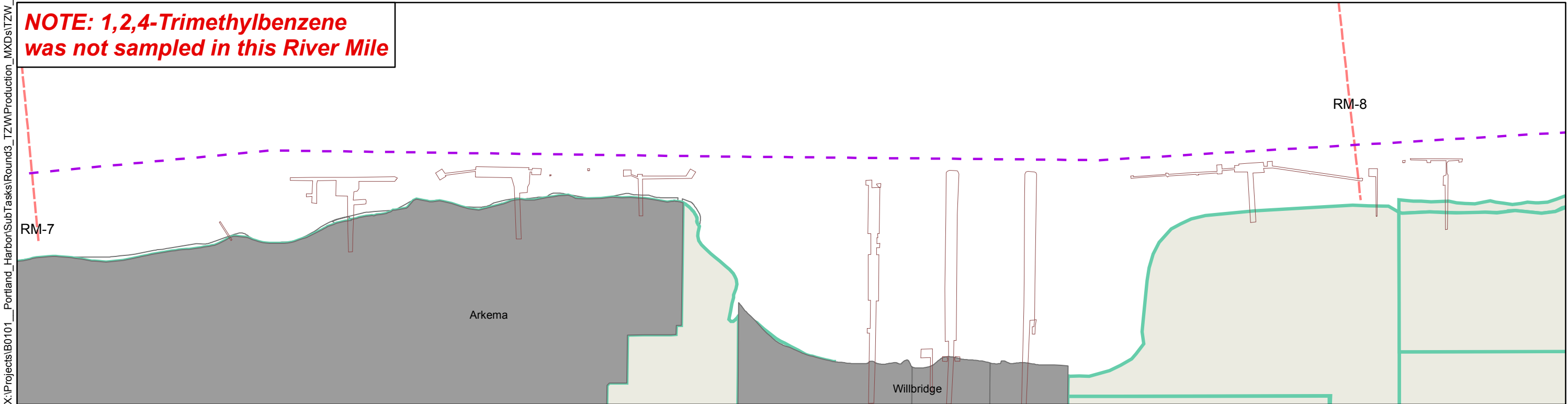
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**Peeper and Unfiltered Trident Samples (all $\mu\text{g/L}$)
River Mile 07 to 08 - Carbon Disulfide**



**NOTE: 1,2,4-Trimethylbenzene
was not sampled in this River Mile**



Map Features

- Docks and Structures
- Navigation Channel
- River Miles
- GWPA Study Site
- Upland ECSI Sites (2008)
- Waterfront Taxlots

0 250 500 750 1,000 Feet

FEATURE SOURCES:
Property and Taxlot Boundaries: Metro RLIS
Channel & River miles: US Army Corps of Engineers.
Docks & In-water Structures: digitized from October
2001 0.33 ft. resolution color orthophotos



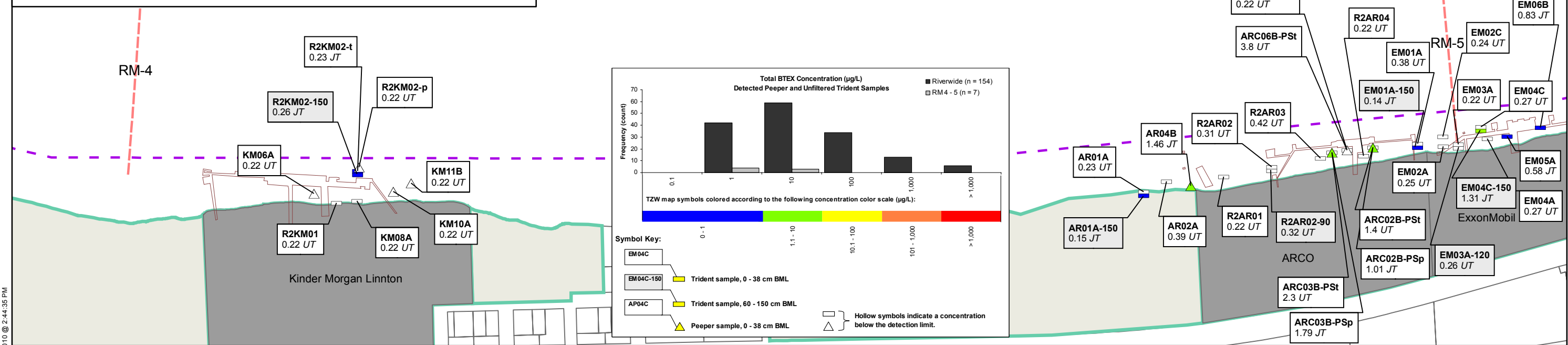
PSt Indicates sample collected during the GWPA Pilot Study by Trident sampler.
PSp Indicates sample collected during the GWPA Pilot Study by small-volume peeper.

Qualifiers:

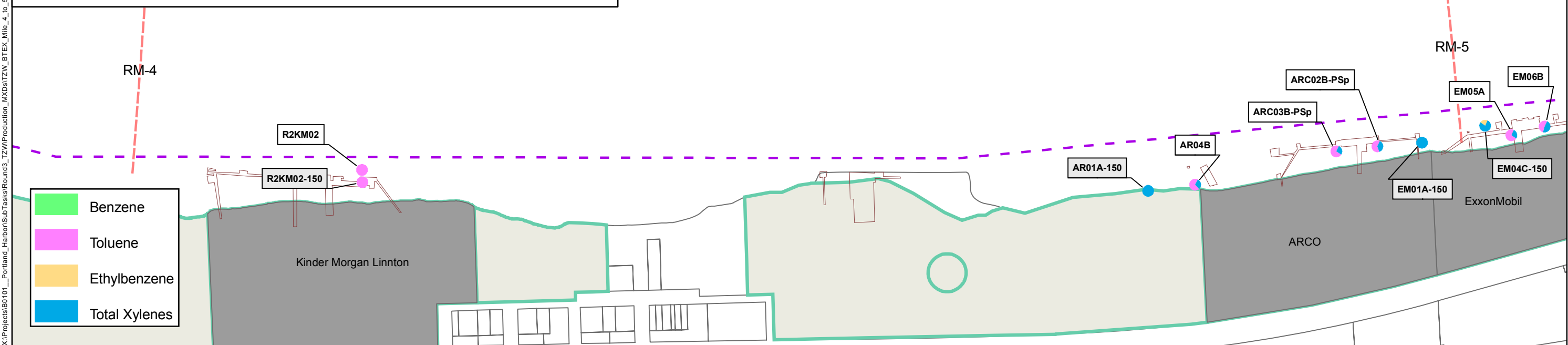
- T Mathematically derived value.
- J The associated numerical value was approximated by the analytical laboratory.
- U The analyte was not detected above the reported sample quantitation limit.
- UJ The analyte was not detected above the reported sample quantitation limit; however, the reported quantitation limit was approximated by the analytical laboratory.
- A Total value based on a limited number of analytes.

Map D4.2-14e
Portland Harbor RI/FS
Remedial Investigation Report
Transition Zone Water Chemistry
Carbon Disulfide ($\mu\text{g/L}$) and 1,2,4-Trimethylbenzene ($\mu\text{g/L}$)
River Mile 07 to 08

**Peeper and Unfiltered Trident Samples (all µg/L)
River Mile 04 to 05**



**BTEX Constituent Distribution (Detected Samples Only)
River Mile 04 to 05**

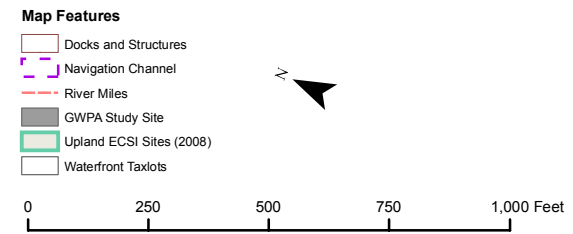


FEATURE SOURCES:
Property and Taxlot Boundaries: Metro RLIS
Channel & River miles: US Army Corps of Engineers.
Docks & In-water Structures: digitized from October 2001 0.33 ft. resolution color orthophotos



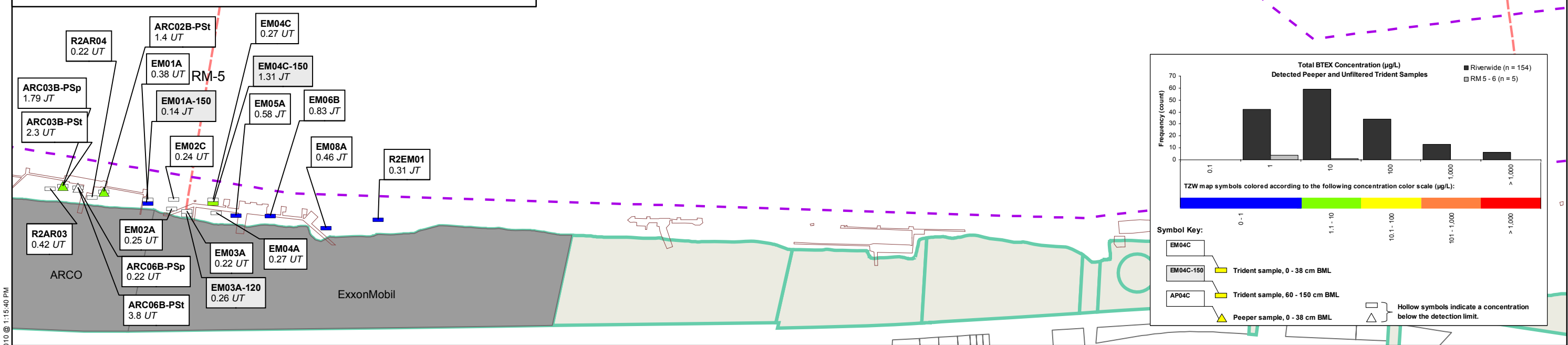
PSt Indicates sample collected during the GWPA Pilot Study by Trident sampler.
PSp Indicates sample collected during the GWPA Pilot Study by small-volume peeper.

Qualifiers:
T Mathematically derived value.
J The associated numerical value was approximated by the analytical laboratory.
U The analyte was not detected above the reported sample quantitation limit.
UJ The analyte was not detected above the reported sample quantitation limit; however, the reported quantitation limit was approximated by the analytical laboratory.
A Total value based on a limited number of analytes.

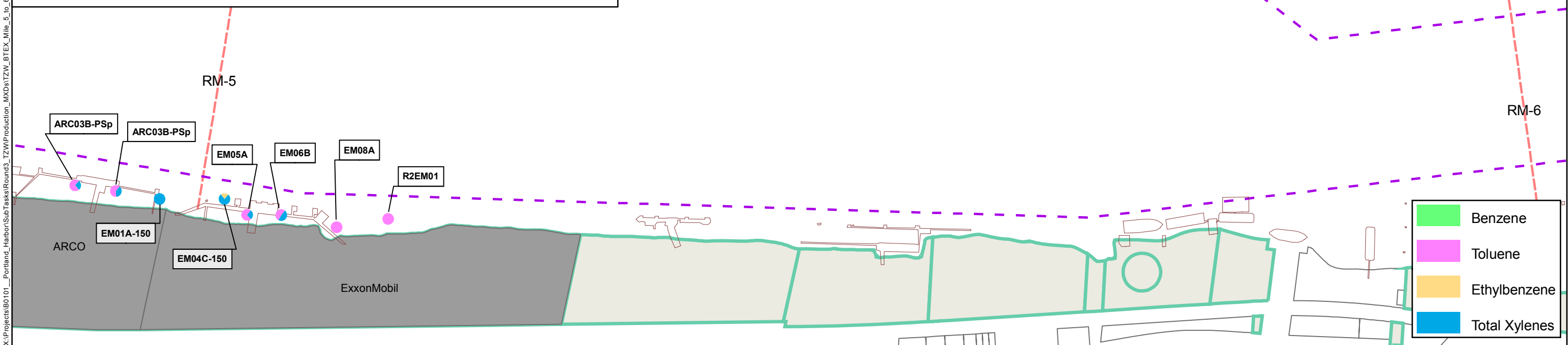


Map D4.2-15a
Portland Harbor RI/FS
Remedial Investigation Report
Transition Zone Water Chemistry
Benzene, Toluene, Ethylbenzene, and Xylenes (µg/L)
River Mile 04 to 05

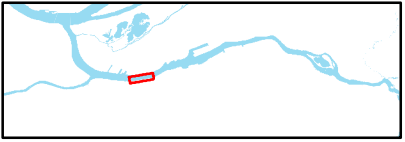
**Peeper and Unfiltered Trident Samples (all µg/L)
River Mile 05 to 06**



**BTEX Constituent Distribution (Detected Samples Only)
River Mile 05 to 06**

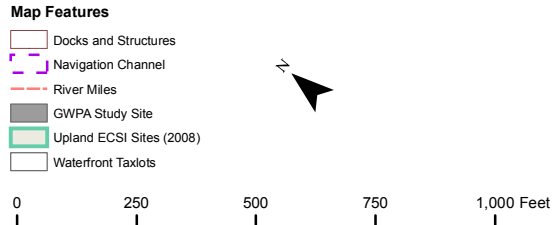


FEATURE SOURCES:
Property and Taxlot Boundaries: Metro RLIS
Channel & River miles: US Army Corps of Engineers.
Docks & In-water Structures: digitized from October 2001 0.33 ft. resolution color orthophotos



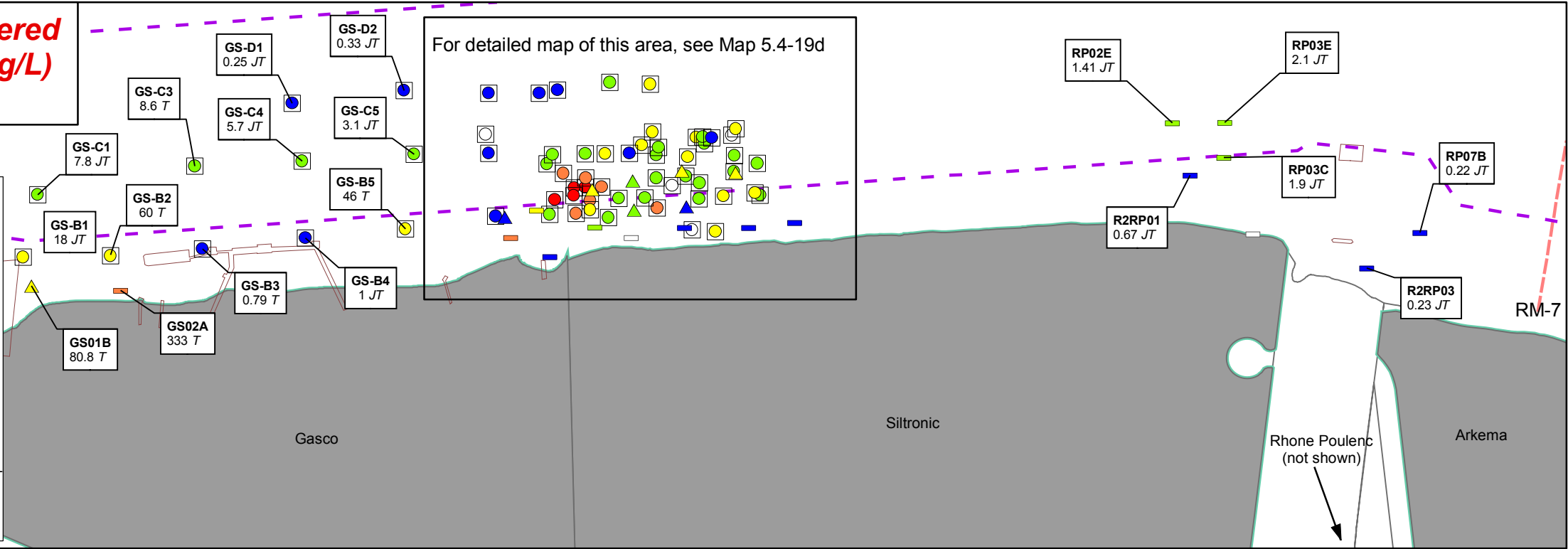
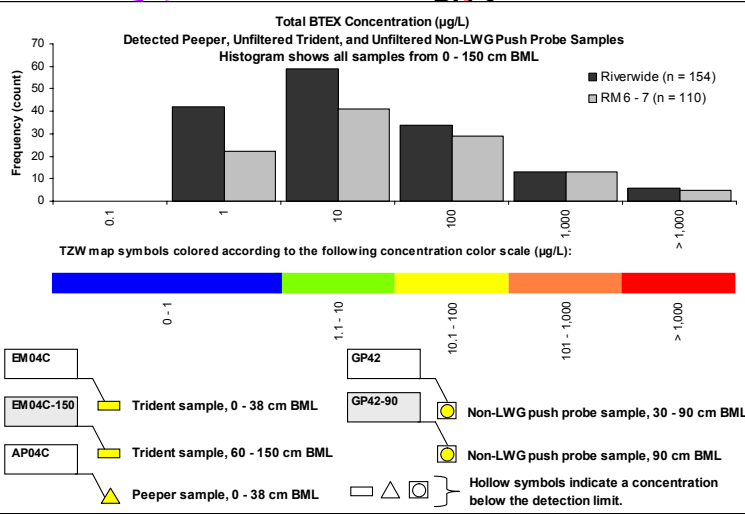
PSt Indicates sample collected during the GWPA Pilot Study by Trident sampler.
PSp Indicates sample collected during the GWPA Pilot Study by small-volume peeper.

Qualifiers:
T Mathematically derived value.
J The associated numerical value was approximated by the analytical laboratory.
U The analyte was not detected above the reported sample quantitation limit.
UJ The analyte was not detected above the reported sample quantitation limit; however, the reported quantitation limit was approximated by the analytical laboratory.
A Total value based on a limited number of analytes.

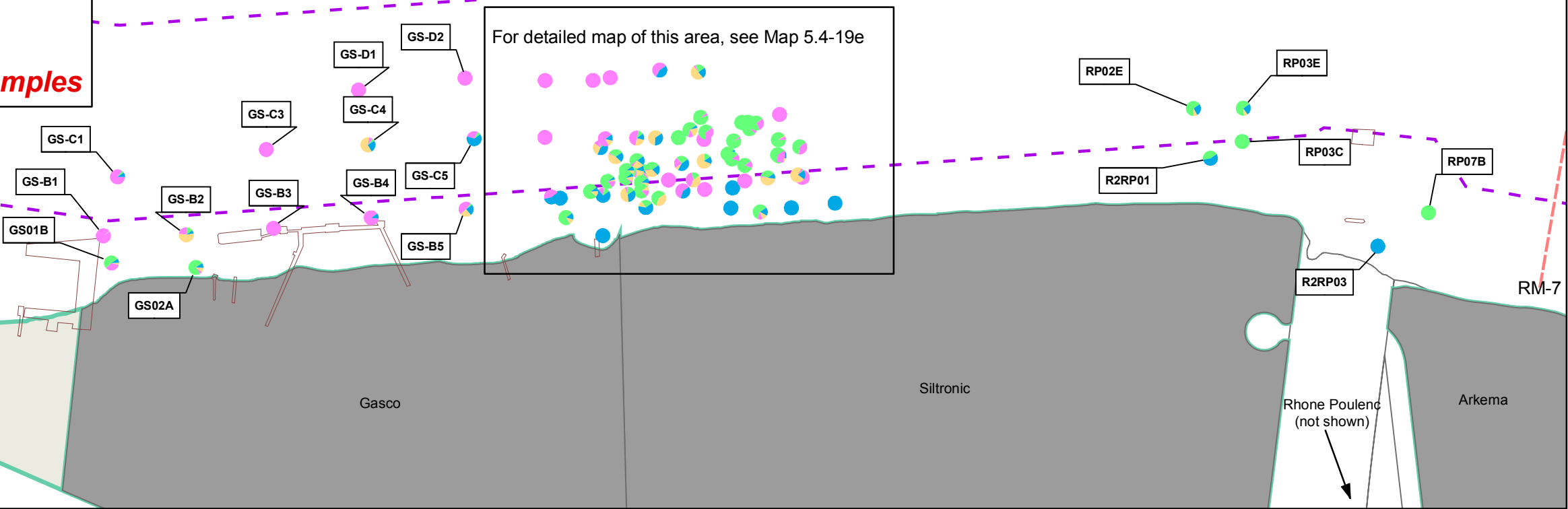
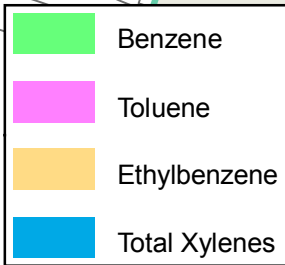


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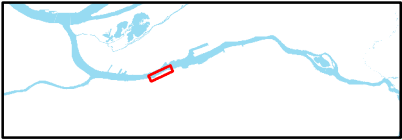
**Peeper, Unfiltered Trident, and Unfiltered Non-LWG Push Probe Samples (all $\mu\text{g/L}$)
River Mile 06 to 07, Shallow Samples**



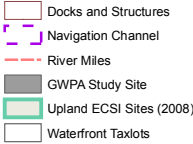
**BTEX Constituent Distribution
(Detected Samples Only)
River Mile 06 to 07, Shallow Samples**



FEATURE SOURCES:
Property and Taxlot Boundaries: Metro RLIS
Channel & River miles: US Army Corps of Engineers.
Docks & In-water Structures: digitized from October 2001 0.33 ft. resolution color orthophotos



Map Features



0 250 500 750 1,000 Feet

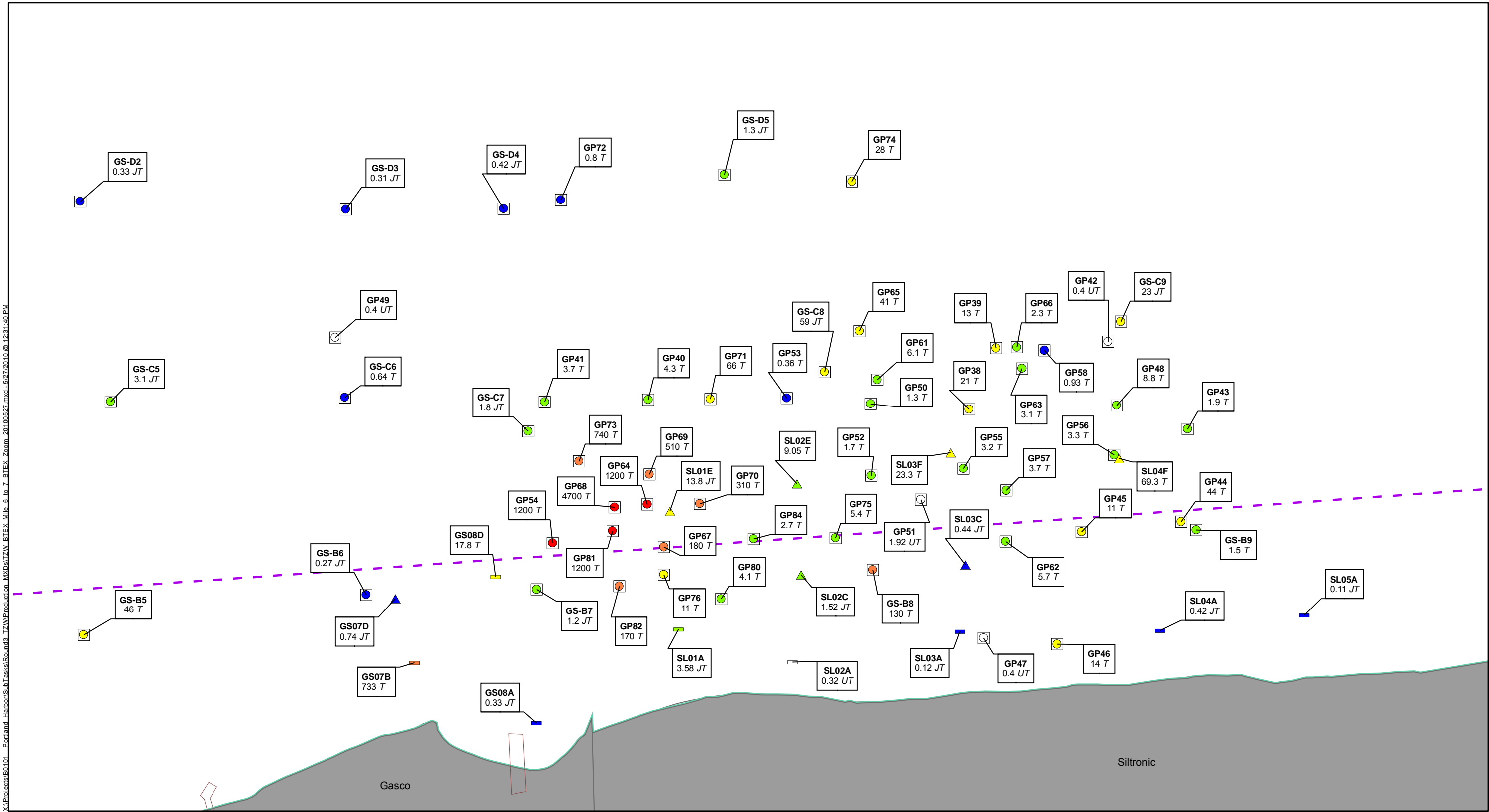
PSi Indicates sample collected during the GWPA Pilot Study by Trident sampler.
PSp Indicates sample collected during the GWPA Pilot Study by small-volume peeper.

Qualifiers:

- T Mathematically derived value.
- J The associated numerical value was approximated by the analytical laboratory.
- U The analyte was not detected above the reported sample quantitation limit.
- UJ The analyte was not detected above the reported sample quantitation limit; however, the reported quantitation limit was approximated by the analytical laboratory.
- A Total value based on a limited number of analytes.

Map D4.2-15c
Portland Harbor RI/FS
Remedial Investigation Report
Transition Zone Water Chemistry
Benzene, Toluene, Ethylbenzene, and Xylenes ($\mu\text{g/L}$)
River Mile 06 to 07, Shallow Samples

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Map Features

- Docks and Structures
- Navigation Channel
- River Miles
- GWPA Study Site
- Upland ECSI Sites (2008)
- Waterfront Taxlots

0 250 500 750 1,000 Feet

FEATURE SOURCES:
Property and Taxlot Boundaries: Metro RLIS
Channel & River miles: US Army Corps of Engineers.
Docks & In-water Structures: digitized from October 2001 0.33 ft. resolution color orthophotos



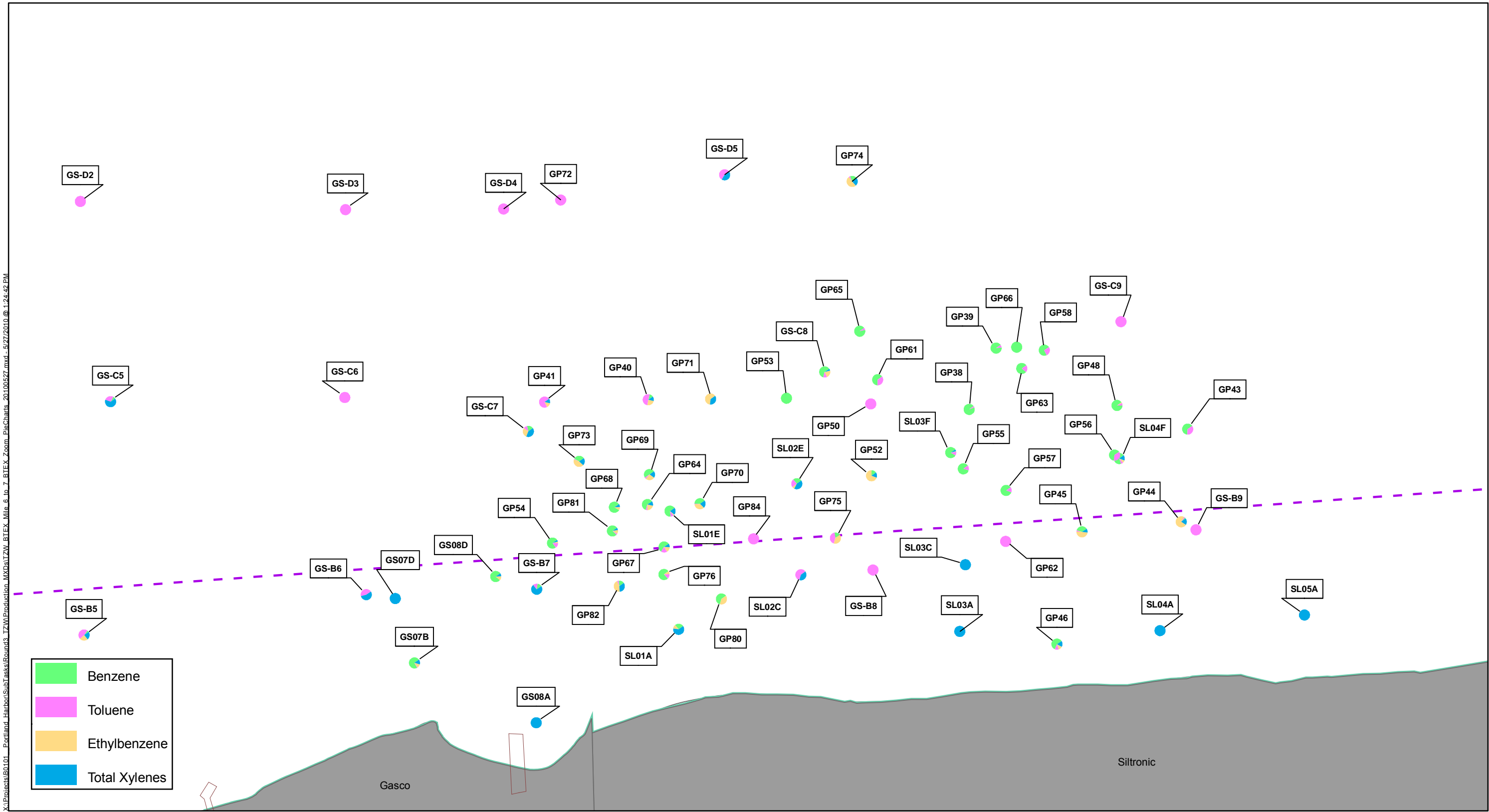
Pst Indicates sample collected during the GWPA Pilot Study by Trident sampler.
Psp Indicates sample collected during the GWPA Pilot Study by small-volume peeper.

Qualifiers:

- T Mathematically derived value.
- J The associated numerical value was approximated by the analytical laboratory.
- U The analyte was not detected above the reported sample quantitation limit.
- UJ The analyte was not detected above the reported sample quantitation limit; however, the reported quantitation limit was approximated by the analytical laboratory.
- A Total value based on a limited number of analytes.

Map D4.2-15d
Portland Harbor RI/FS
Remedial Investigation Report
Transition Zone Water Chemistry
Benzene, Toluene, Ethylbenzene, and Xylenes (µg/L)
River Mile 06 to 07, Shallow Zoom

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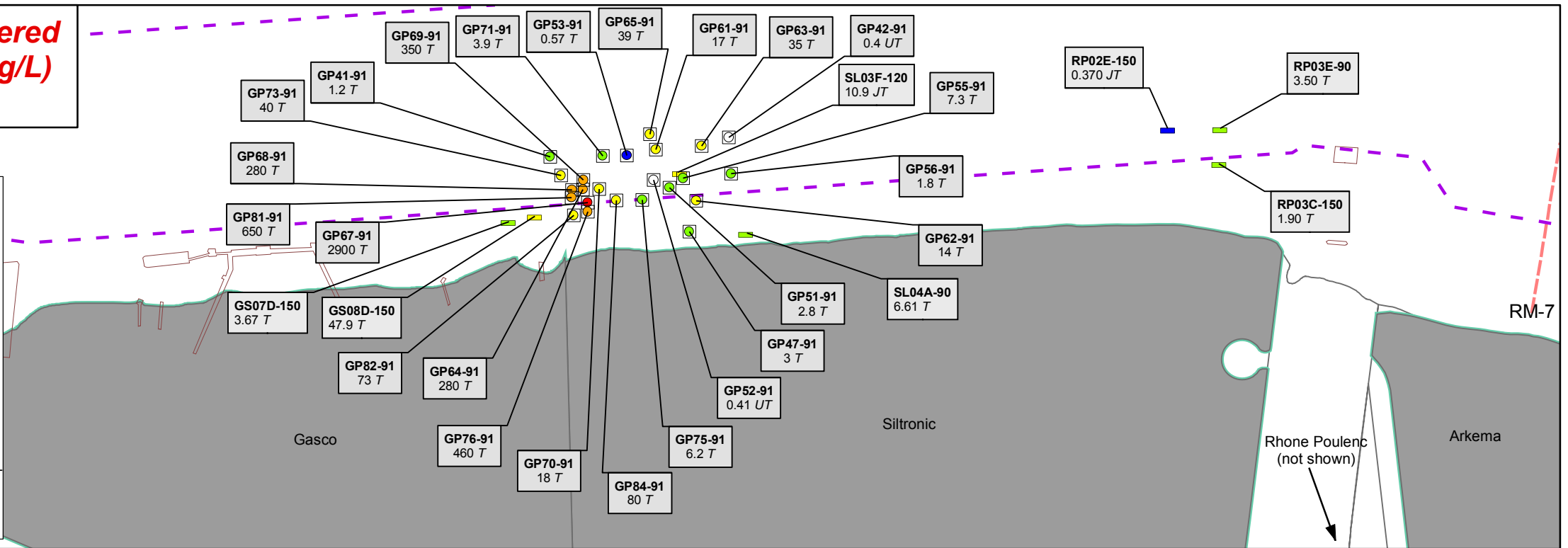
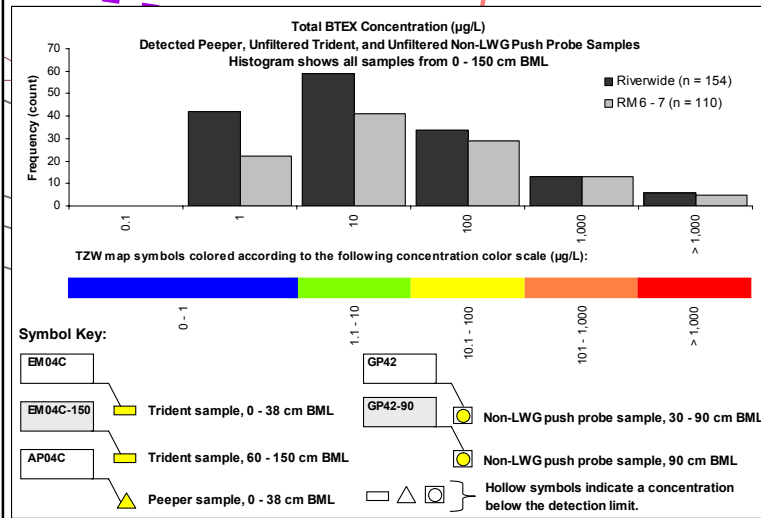


Pst Indicates sample collected during the GWPA Pilot Study by Trident sampler.
PSp Indicates sample collected during the GWPA Pilot Study by small-volume peeper.

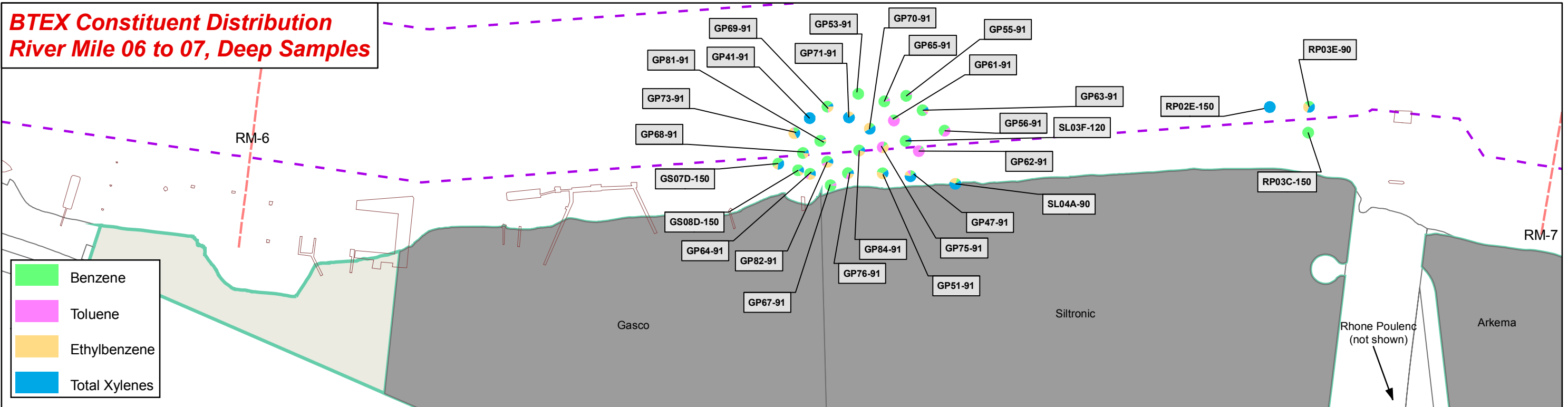
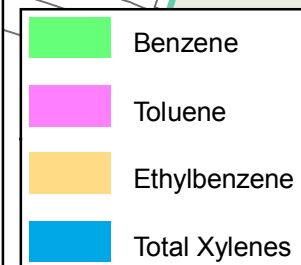
Qualifiers:
T Mathematically derived value.
J The associated numerical value was approximated by the analytical laboratory.
U The analyte was not detected above the reported sample quantitation limit.
UJ The analyte was not detected above the reported sample quantitation limit; however, the reported quantitation limit was approximated by the analytical laboratory.
A Total value based on a limited number of analytes.

Map D4.2-15e
Portland Harbor RI/FS
Remedial Investigation Report
Transition Zone Water Chemistry
Benzene, Toluene, Ethylbenzene, and Xylenes (µg/L)
River Mile 06 to 07, Shallow Zoom Pie Charts

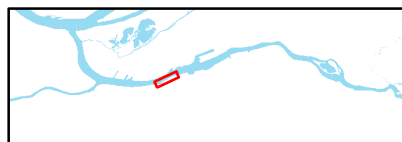
**Peeper, Unfiltered Trident, and Unfiltered Non-LWG Push Probe Samples (all µg/L)
River Mile 06 to 07, Deep Samples**



**BTEX Constituent Distribution
River Mile 06 to 07, Deep Samples**



FEATURE SOURCES:
Property and Taxlot Boundaries: Metro RLIS
Channel & River miles: US Army Corps of Engineers.
Docks & In-water Structures: digitized from October 2001 0.33 ft. resolution color orthophotos



PSi Indicates sample collected during the GWPA Pilot Study by Trident sampler.
PSp Indicates sample collected during the GWPA Pilot Study by small-volume peeper.

Qualifiers:
T Mathematically derived value.
J The associated numerical value was approximated by the analytical laboratory.
U The analyte was not detected above the reported sample quantitation limit.
UJ The analyte was not detected above the reported sample quantitation limit; however, the reported quantitation limit was approximated by the analytical laboratory.
A Total value based on a limited number of analytes.

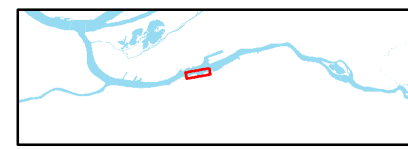
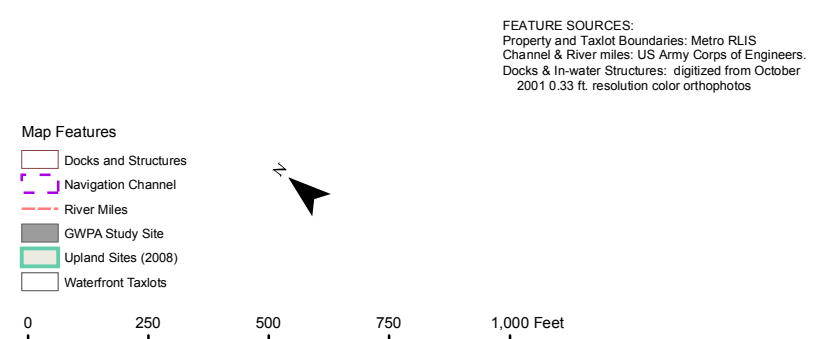
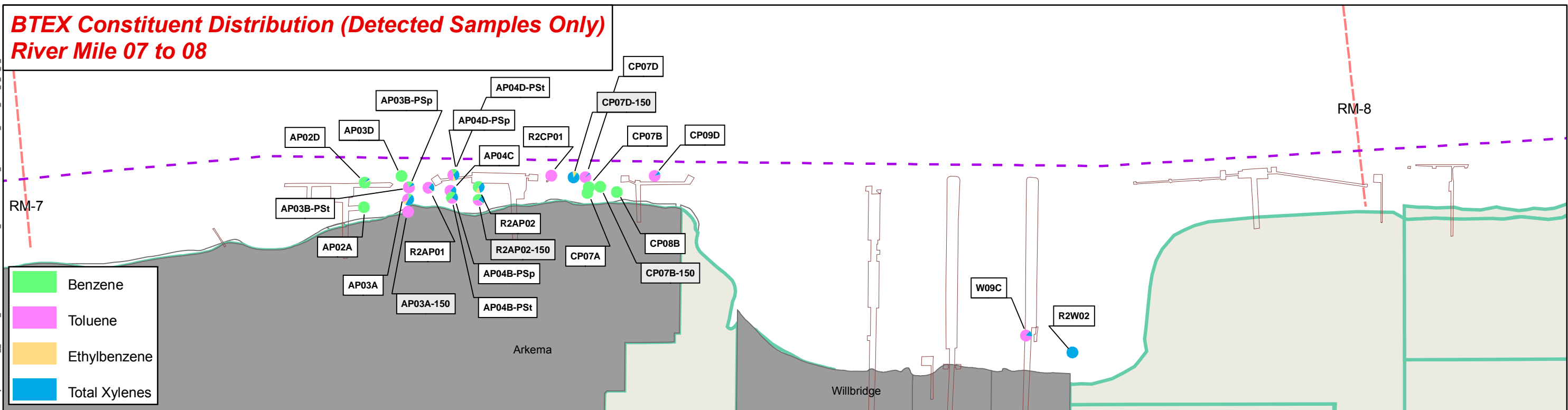
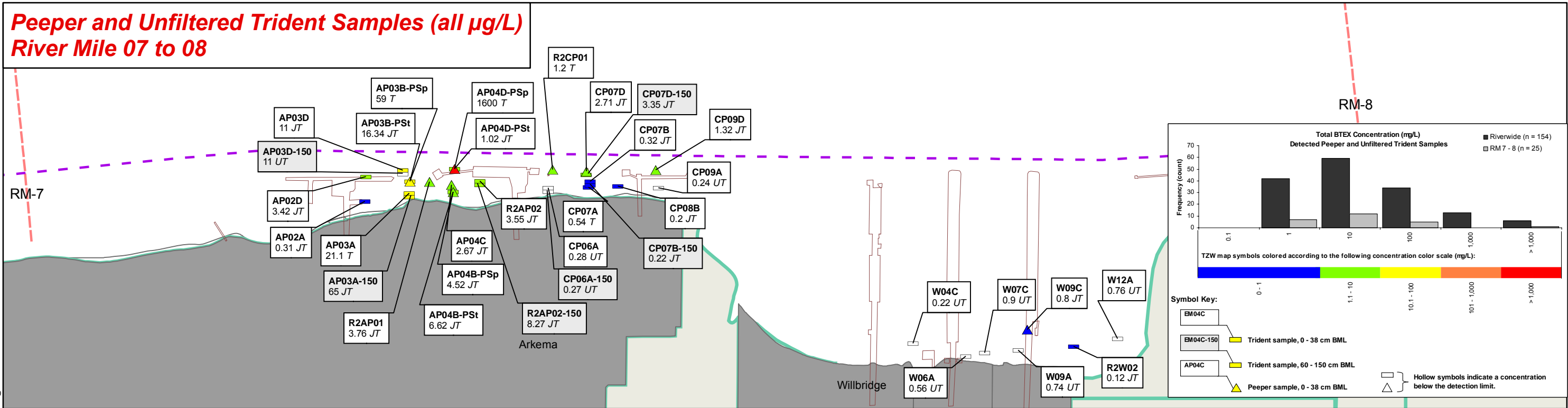
Map Features

- Docks and Structures
- Navigation Channel
- River Miles
- GWPA Study Site
- Upland ECSI Sites (2008)
- Waterfront Taxlots

0 250 500 750 1,000 Feet

Map D4.2-15f
Portland Harbor RI/FS
Remedial Investigation Report
Transition Zone Water Chemistry
Benzene, Toluene, Ethylbenzene, and Xylenes (µg/L)
River Mile 06 to 07, Deep Samples

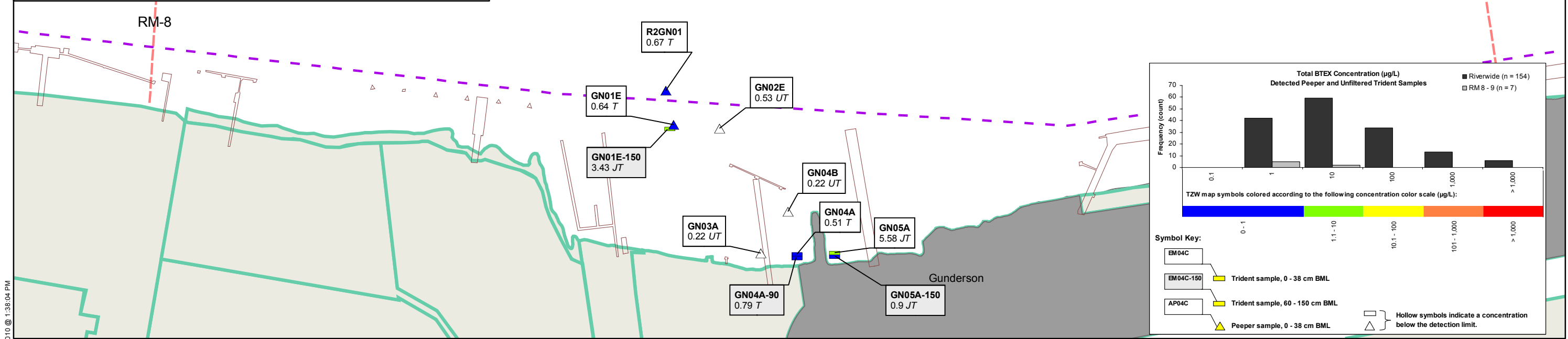
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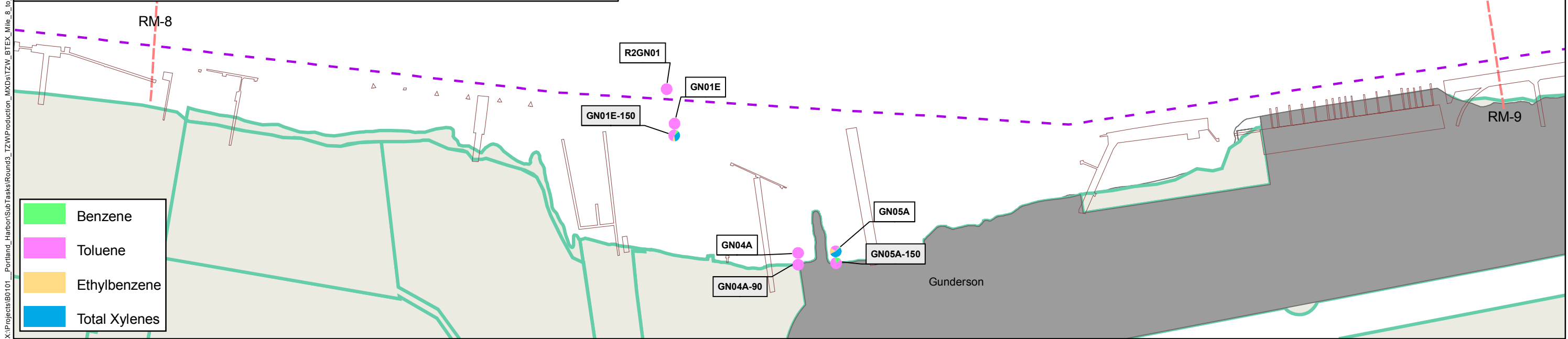
Tabular Results Notes:

- T Mathematically derived value.
- J The associated numerical value was approximated by the analytical laboratory.
- U The analyte was not detected above the reported sample quantitation limit.
- UJ The analyte was not detected above the reported sample quantitation limit; however, the reported quantitation limit was approximated by the analytical laboratory.
- A Total value based on a limited number of analytes.

**Peeper & Filtered Trident Samples (all µg/L)
River Mile 08 to 09**



**BTEX Constituent Distribution (Detected Samples Only)
River Mile 08 to 09**



FEATURE SOURCES:
Property and Taxlot Boundaries: Metro RLIS
Channel & River miles: US Army Corps of Engineers.
Docks & In-water Structures: digitized from October
2001 0.33 ft. resolution color orthophotos



Tabular Results Notes:
T Mathematically derived value.
J The associated numerical value was approximated by the analytical laboratory.
U The analyte was not detected above the reported sample quantitation limit.
UJ The analyte was not detected above the reported sample quantitation limit; however,
the reported quantitation limit was approximated by the analytical laboratory.
A Total value based on a limited number of analytes.

Map Features

- Docks and Structures
- Navigation Channel
- River Miles
- GWPA Study Site
- Upland ECSI Sites (2008)
- Waterfront Taxlots



0 250 500 750 1,000 Feet

Map D4.2-15h
Portland Harbor RI/FS
Remedial Investigation Report
Transition Zone Water Chemistry
Benzene, Toluene, Ethylbenzene, and Xylenes (µg/L)
River Mile 08 to 09